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CHRONIC PEPTIC ULCER

RECORD OF A PERSONAL EXPERIENCE *

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Statistics in surgical papers are usually introduced for the purpose of strengthening an argument. Many times, in the maze of an argument, the truth contained in statistics is obscured by eloquence. The moot points of the treatment of peptic ulcer have been so thoroughly discussed in recent years that it would seem fruitless to discuss them further.

I have no important surgical procedure and only a few unimportant original points in technic to offer on the surgical treatment of chronic peptic ulcer. I have attempted to apply the many excellent procedures which have been brought forward by others in such a way as to obtain the best results for the patient. The results of this effort are set forth in the accompanying tables, which include my entire recorded experience. I have performed a few operations away from home in other clinics. Also, a few operations were done prior to the one recorded, April 14, 1904. Of these, I have no record. Every case in which I have operated in my regular operating hospital from that date until the present has been recorded and is included in these tables. All patients have been seen in private practice, as I have never had a charity service. The records of the operations performed between 1904 and 1910 were kept in a book along with all my other surgical records. Unfortunately, in 1921, the book disappeared from the office and we have never been able to find it since, so that for the thirty-two ulcer cases recorded during these years the original record is not available. Fortunately, we had transcribed the important points of these cases to a special book in which the record of ulcer cases is kept. Furthermore, reports of all these cases had been published in the literature and a number of the patients have been recently traced by correspondence, so that, while the original record in these thirty-two cases is not available, the records are accurate as far as they go. The original record of all other cases included in these tables is available. From these original records, the operative mortality has been obtained along with the date of death and, as far as could be determined, the cause of death. The follow-up records are by no means so accurate. In the first place, less than 80 per cent of the patients have been traced. A searching follow-up system should locate some of the seventy-eight cases that have not been traced. This I hope to do in the future. The follow-up has been conducted by circular letters sent out periodically. Three of these letters have been in the form of questionnaires specially prepared to get the after-results of the surgical treatment of ulcer. Some of the patients who did not reply by letter have reported in person.

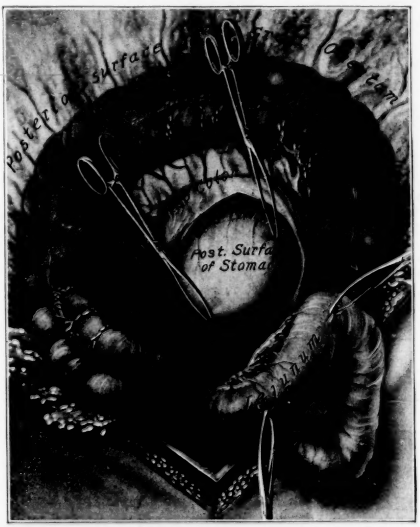

Fig. 1.—The transverse mesocolon has been opened to the left of the middle colic artery, and the stomach and intestine have been picked up at points where traction loops are passing through the viscera.

The replies that I have received have in many instances failed to give the definite cause of failure. I hope by searching inquiries later to get more accurate details as to hemorrhages and secondary ulcers developing long after operation. It will be at once apparent that the tables defining the four grades of success are only relative and must necessarily be elastic. For instance, a number of the patients in whom hemorrhage followed operation and who have been classified under the head of "Fair" or "Unsatisfactory" have now gone for several years without gastric symptoms and therefore should be transferred to the "Cured" list. As an example, in chronological case 89 of this series there were at least five near fatal hemorrhages during the

* Read before the Southern Surgical Association, Dec. 19, 1927.

first five years following operation but there has now been an entire absence of stomach symptoms for approximately eight years. On the other hand, in chronological case 102 there was an obstructing duodenal ulcer. Gastro-enterostomy was performed. The patient remained entirely well for five years without stomach symptoms. At the end of five years he suddenly developed diarrhea, the stools containing food eaten only a few minutes before. At operation, a jejunocolic fistula nearly 2 cm. in diameter was found. This vicarious anastomosis was severed, the colon sewed, the jejunum sewed and the full thickness of the omentum drawn between. The patient was again cured but a year later developed the same symptoms and consulted Dr. Percy of Chicago, who found a jejunocolic fistula again. A few months later another surgeon of Chicago who was called to see him found the same condition. At this time he died. Consequently, with the present classification, this case must be taken out of the "Cured" list and put in the "Died Later" class. Therefore, frequent revision of these tables will be necessary.

Fig. 2.—Traction loops have been tied and given one turn around the standard on "Lang's traction suture holder frame." A middle suture is being placed. Note that the jejunum is turned to the left, and that the first line of suture is placed near its mesenteric border. The gauze which should cover the field has been purposely left off with the idea of showing all the structures.

To avoid misinterpretation of the tables, certain things should be explained. It will be observed that in 375 gastro-enterostomies performed in this twenty-four year period the mortality was only 2.4 per cent, while there were ninety-six cases in which operation other than gastro-enterostomy was performed, with eleven deaths, 11.4 per cent. This discrepancy is more apparent than real because, first, the gastro-enterostomy operations were performed largely for duodenal ulcer, which is not such a serious condition as gastric ulcer, and, secondly, the ninety-six radical operations include most of the gastric ulcers and the bleeding ulcers, some of which were duodenal. These patients as a group were handicapped to begin with, so that these statistics do not give a great deal of accurate evidence as to the relative difference in mortality between the radical operation and gastro-enterostomy. For instance, in the last three deaths recorded in table 3, the eighteenth operative death from ulcer was in a patient with syphilis whose strength was very much depleted by extensive ulceration and bleeding; the nineteenth operative death from ulcer was in a patient who had to have a blood transfusion before an operation could be performed,

TABLE 1.—*Type of Operation and Result*

Year	Sex: Male	Sex: Female	Type of Operation: P. Gastro-Ent.	A. Gastro-Ent.	Simple Excision	Excision, P.G.E.	Sleeve Resection	Balfour Cautery	Cautery, P.G.E.	Finney	Finney-Balfour	Jejunostomy	Gastro-Gastros. I.G.E.	Rodman	Von Eiselsberg	Polya Type	Total Cases	Total Died	Total Traced	Result: Total Cured	Total Fair	Total Unsatisfactory	Total Unimproved	Total Died Later
1904	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	1	..	..	..	..
1906	..	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	1	1	..	..	..	..
1906	1	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..
1907	6	4	8	..	..	..	..	..	..	1	..	..	..	1	..	..	10	1	5	3	1	..	..	1
1908	1	4	5	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	1	1	..	..	..	..
1909	4	4	8	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	3	2	..	..	..	1
1910	10	4	7	..	4	..	1	..	..	1	..	..	1	..	..	..	14	2	8	4	1	2	..	1
1911	6	1	4	..	1	..	..	..	..	1	..	..	..	1	..	..	7	..	4	1	..	..	..	3
1912	5	5	4	..	2	..	1	..	..	..	..	..	..	2	1	..	10	2	6	4	..	..	..	2
1913	10	7	3	..	2	..	..	..	..	..	..	..	..	5	7	..	17	1	14	10	..	2	..	2
1914	11	12	9	..	..	..	1	..	..	1	..	..	..	1	11	..	23	1	18	11	4	1	..	2
1915	19	9	14	..	2	..	3	..	..	3	..	..	..	4	2	..	28	3	15	6	2	1	..	6
1916	8	8	9	1	..	..	2	1	..	1	1	1	..	..	..	..	16	2	11	5	2	1	..	3
1917	22	12	33	1	..	..	..	..	..	..	..	..	..	..	..	..	34	1	28	18	5	2	1	2
1918	25	6	29	..	..	..	..	..	..	1	..	1	..	..	..	..	31	1	22	17	2	..	1	2
1919	18	5	22	..	1	..	..	..	..	..	..	..	..	..	..	..	23	1	21	15	2	..	3	1
1920	19	6	23	..	1	1	..	..	..	..	..	..	..	..	..	..	25	..	24	19	4	..	..	1
1921	20	6	25	1	..	..	..	..	..	..	..	1	..	..	..	..	26	..	22	16	3	2	..	2
1922	19	6	23	..	1	..	..	..	..	..	..	..	..	..	..	..	25	..	25	21	2	1	1	..
1923	23	4	24	..	..	..	..	..	1	..	..	..	..	..	..	2	27	..	23	16	6	1	..	..
1924	30	9	37	..	1	..	..	..	..	..	..	..	..	..	..	1	39	2	34	25	7	2	..	..
1925	21	3	21	..	1	2	..	..	..	..	..	..	..	..	..	3	27	2	24	15	6	1	..	2
1926	34	7	34	..	..	4	..	..	..	..	..	..	..	..	..	3	41	1	39	28	6	5	..	..
1927 (11 mo.)	20	6	21	..	..	3	..	..	..	..	..	..	1	..	..	1	26	..	23	18	3	1	..	1
Total	337	134	372	3	16	10	8	1	1	9	1	3	2	14	21	10	471	30	373	258	55	22	6	32
Percentage																		4.2	79.2	69.2	14.8	5.9	1.6	8.5

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TABLE 2.—*Results in Different Types of Operations*

	Total Cases	Total Died	Total Untraced	Total Traced	Total Cured	Total Fair	Total Unsatisfactory	Total Unimproved	Total Died Later	Total Cured and Fair without Stomach Symptoms
Gastro-enterostomies	375	9	61	305	223	44	12	6	20	268
Percentage		2.4	16.3	81.3	73.1	14.4	4	2	6.5	87.5
Simple excision	16	1	2	13	5	1	5	..	2	..
Excision and P.G.E.	10	1	1	7	2	3	2	..	..	..
Sleeve resection	8	2	2	4	2	1	..	..	1	..
Balfour cautery	1	..	..	1	..	1	..	..	..	..
Cautery and P.G.E.	1	..	1	..	..	..	..	..	..	..
Finney	9	..	2	7	4	2	..	..	1	..
Finney and Balfour	1	1	..	..	..	..	..	..	..	..
Jejunostomy	3	..	1	2	..	..	1	..	1	..
G. Gastrostomy	2	..	..	2	..	..	..	..	..	..
Rodman	14	2	2	10	7	..	..	..	3	..
Von Eiselsberg	21	2	5	14	7	2	2	..	2	..
Polya type	10	2	1	7	5	1	..	..	1	..
Operations other than simple gastro-enterostomy	96	11	17	68	35	11	10	..	12	45
Percentage		11.4	17.7	70.9	51.5	16.2	14.7	..	17.6	67+
Grand total	471	20	78	373	258	55	22	6	32	313
Percentage		4.2	16.8	79+	69	14.8	5.9	1.6	8.7	84

DEFINITIONS

Cured: No symptoms referable to the abdomen.

Fair: Ordinarily free from abdominal symptoms but with the discomfort following dietary indiscretions and overwork. Symptoms not gastric.

Unsatisfactory: Certain gastric symptoms, such as occasional acid stomach, hemorrhages, vomiting of bile. Not sufficient to incapacitate. Some of this group probably secondary ulcers.

Unimproved: Symptoms similar to those preceding operation. Most of these cases secondary ulcers.

P.G.E.: Posterior gastro-enterostomy.

Rodman: Pylorectomy with P.G.E. (similar to Billroth number 2).

Von Eiselsberg: Pylorus cut off proximal to ulcer, followed by P.G.E.

Polya: Partial gastrectomy, end to side anastomosis of stomach with jejunum.

Percentages: Based on total number of operations.

and the twentieth death was in a confirmed alcoholic addict.

It is also well to compare the earlier cases with the more recent cases. At the close of the year 1916, in

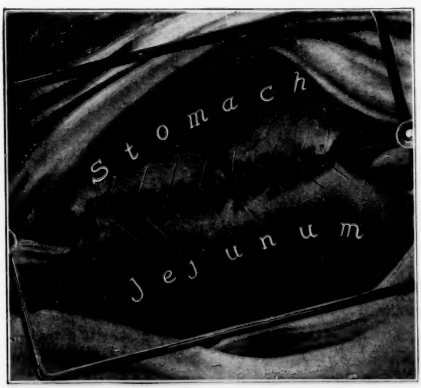

Fig. 3.—Superficial linen sutures have been placed; a deep layer of interrupted quilt sutures is being tied.

looking up the statistics of the radical surgery which I had been doing, I was shocked by the great mortality. Therefore, I turned to the more conservative operations. Thus, it is well to consider separately the work of the eleven years since that time. During the eleven years from 1917 to 1927, inclusive, it will be observed in table 1 that there were 324 patients operated on with eight deaths, a mortality rate of 2.46 per cent, against the total mortality for twenty-four years in 471 cases of 4.2 per cent. During the last period of eleven years there were 294 gastro-enterostomies with five deaths,

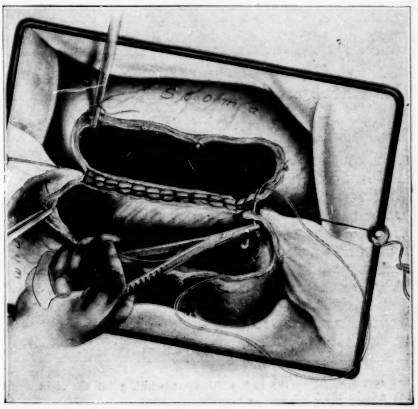

Fig. 4.—A lock stitch of double chromic catgut has been placed on the posterior border of anastomosis; the turn is being made with a curved needle, which will continue around to within one-half inch of point of beginning as a lock stitch.

a mortality of 1.7 per cent, as against 2.4 per cent of the gastro-enterostomies for the entire series. During this eleven year period there were thirty operations other than gastro-enterostomy with three deaths, a mortality of 10 per cent, but these three deaths were in the patients described as handicapped in whom a gastro-enterostomy was not practical.

As very striking evidence of the futility of a small series of statistics, table 3 shows that chronologically from ulcer cases 213 to 370, 158 consecutive cases, there was no death in the series. Immediately following, it will be noted that ulcer cases 370 and 372 terminated fatally. The series of 158 consecutive operations for ulcer without a death has no more statistical value than the series of three operations which immediately followed, in which there were two deaths, a mortality of 66⅔ per cent.

One inclined to the purely mechanical view of surgery is apt to become wedded to the biblical dictum "If thy right hand offend thee, cut it off. If thine eye offend thee, pluck it out." The experience recorded in the foregoing tables seems to me to be evidence that, generally speaking, this is not the point of view from which one should approach the treatment of peptic ulcer, for if there is reason for surgery of extirpation, as in a large indurated crater ulcer of the stomach or in bleeding ulcer of the duodenum, it is still important to do a gastro-enterostomy in addition. On the other hand, there is no evidence forthcoming in my experience to prove that excision of a duodenal ulcer combined with the gastro-enterostomy, even in bleeding ulcer, gives better results than simple gastro-enterostomy, and there is evidence to show that the routine excision of the duodenal ulcer adds to the danger.

I am a devotee of the Sippy conception of ulcer, and therefore believe in rest of the diseased area combined with dilution of the digestive juices. In a large percentage of early cases, Sippy's well planned regimen is sufficient and would, under those circumstances, if properly applied and if in addition remote septic foci were removed, doubtless cure the majority of ulcers. Unfortunately, the majority of patients with ulcer do not get this kind of treatment. The average existence of the peptic ulcer when it reaches the surgeon is approximately ten years. By this time, the ulcer area has become scarred and the infection is thoroughly entrenched where it lies ready to be activated under proper conditions. In such a case, the Sippy treatment

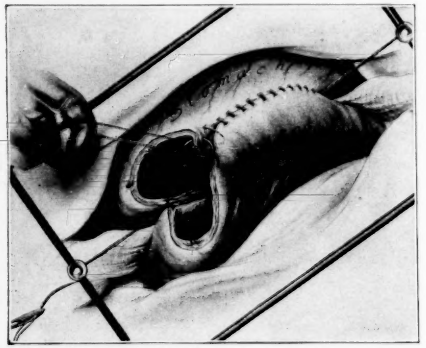

Fig. 5.—Completing the lock stitch from which point the right angle stitch will be used.

TABLE 3.—*Immediate Deaths*

	Date	Chronol. Case No.	Type of Operation	Cause
1	Dec. 6, 1907	19	P.G.E.	Uremia
2	Oct. 28, 1910	41	P.G.E.	Hemorrhage following
3	Nov. 22, 1910	44	Exc. of ulcer	11 days after op.; pneumonia
4	Nov. 2, 1912	59	P.G.E.	24 da. after op., pernicious vomit.
5	Dec. 12, 1912	62	Pylorectomy	Pneumonia
6	May 29, 1913	69	Von Eiselsberg	9 days after op.; peritonitis
7	July 30, 1914	94	Von Eiselsberg	Pernicious vomiting
8	Jan. 6, 1915	103	Sleeve resec.	Shock
9	July 8, 1915	116	Rodman	12 days after operation; torsion at anastomosis
10	Dec. 23, 1915	130	P.G.E.	Few days after op., of uremia
11	Mar. 7, 1916	133	Fin. and Balf.	Few days after op.; uremia
12	Sept. 21, 1916	139	Sleeve resec.	30 days after operation sudden hemorrhage in secondary ulcer
13	Oct. 18, 1917	172	P.G.E.	8 days after operation; hemorrhage following use of clamps
14	Jan. 19, 1918	182	P.G.E.	Torsion at anastomosis producing intestinal obstruction
15	Jan. 9, 1919	213	P.G.E.	20 days after operation; pneumonia and lung abscess
16	Nov. 20, 1924	370	P.G.E.	41 d. after op., septic pneum. contracted in hospital 2 wks. after operation; recovery
17	Nov. 22, 1924	372	P.G.E.	2 days after operation, sudden heart failure; embolism
18	Feb. 12, 1925	378	Partial gastrect.	13 days after operation, lobar pneumonia in syphilitic patient
19	Aug. 22, 1925	396	Resec. by caut.	3 d. after op., shock, pt. having had exhausting hemorrhages before op.; was also syphilitic
20	Aug. 3, 1926	421	Pylorectomy	12 d. after op., pneumonia developed 2 days after operation; patient confirmed alcoholic

is only partially and temporarily successful for the reason that the patient cannot constantly maintain the treatment. A gastro-enterostomy allows the stomach to empty promptly, dilutes the digestive juices, and puts at rest infected parts, thus applying all the principles of treatment required by the Sippy conception. In symposiums on peptic ulcer, in which there is usually at least one address by some able surgeon who devotes his energies to a discussion of the evils and failures of gastro-enterostomy, I cannot escape the suspicion in some instances that the speaker has overlooked some point in the technic of gastro-enterostomy or is working on purely theoretical grounds; for it seems to me that there is no operation in abdominal surgery which gives more uniformly good results. I will therefore present a composite technic for gastro-enterostomy which is taken chiefly from the work of other surgeons.

In this work, three types of abdominal incisions have been used—right rectus, left rectus and midline—each having its advantages and drawbacks under certain conditions. Recently Dr. G. A. Sloan[1] described a new incision for upper abdominal surgery. I was at once convinced of its merit and have already used it in three cases; I feel certain that it has distinct merit as an approach for stomach surgery. Unless some detracting features show up later, I predict that it will prove to be a very important contribution.

As soon as the abdomen is opened, the ulcer is inspected, and the appendix and gallbladder are both examined by palpation and by inspection when practical. I have not been convinced that these organs constitute an important factor in the etiology of ulcer, for I have seen them no more frequently involved in cases of peptic ulcers than in other abdominal conditions. If the appendix is diseased, it is removed. Otherwise, it is not disturbed. If the gallbladder is grossly diseased or filled with stones, which is rare in these cases, it is likewise removed. A duodenal ulcer on the anterior surface is covered in by drawing the greater and lesser omentum across the duodenum with stitches. If there is any reason for excising a duodenal ulcer, this is done

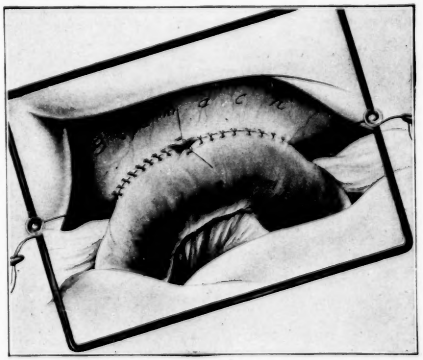

Fig. 6.—The two lines of continuous catgut sutures have been placed; superficial interrupted linen covers over this catgut suture line on the anterior side of the anastomosis.

before the gastro-enterostomy. If a gastric ulcer is to be excised, I prefer in most instances to do the gastro-enterostomy first, so that, in case the patient is not in perfect condition, the excision of the ulcer may be postponed until a few days later. When one is ready for the gastro-enterostomy, the colon is lifted upward, and an opening is made through the transverse meso-

1. Sloan, G. A.: Surg. Gynec. Obst. **45**: 678 (Nov.) 1927.

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colon in the space to the left of the middle colic artery. With the left hand, the stomach is pushed down through the opening. The posterior surface of the stomach about one-half inch away from the epiploic artery and just to the left of the lowest point of the greater curva-

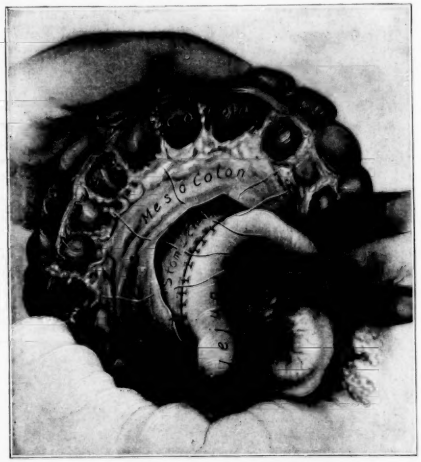

Fig. 7.—Method of suturing the edge of the wound in the transverse mesocolon to the stomach.

ture is picked up with Allis forceps. The middle of the posterior surface of the stomach is picked up with another pair of Allis forceps caudad to the first forceps

TABLE 4.—*Subsequent Deaths*

	Date	Chronol. Case No.	Type of Operation		Died Later, Cause
1	Nov. 19, 1907	18	Rodman	R	7 yrs., auto accident
2	Mar. 10, 1909	25	P.G.E.	R	Died later, cause and date unknown
3	Dec. 7, 1910	45	Exc. of U.	R	5 yrs., pulmonary trouble
4	Apr. 3, 1911	48	Exc. of U.	R	4 yrs., carcinoma of stomach
5	May 10, 1911	49	P.G.E.	R	3 yrs., carcinoma of stomach
6	Sept. 13, 1911	51	P.G.E.	R	3 yrs., tuberculosis
7	Apr. 10, 1912	56	P.G.E.	R	2 yrs., cause unknown
8	Dec. 9, 1912	60	Sl. resec.	R	1 yr., cause unknown
9	July 22, 1913	70	Von Eis.	R	1 yr. from 3d op. for recur.
10	Dec. 29, 1913	78	Pyloroc.	R	1 yr., carcinoma of liver
11	Jan. 5, 1914	80	Von Eis.	R	1922, nephritis; no st. trouble
12	Oct. 13, 1914	102	P.G.E.	R	7 yrs., recurrence
13	Mar. 12, 1915	112	P.G.E. and Von Eis.	R	7 yrs., perforating ulcer
14	Mar. 13, 1915	113	Finney	R	3 yrs., apoplexy
15	July 19, 1915	117	P.G.E.	R	5 yrs., heart trouble
16	Aug. 25, 1915	119	P.G.E.	R	5 yrs., apoplexy
17	Sept. 25, 1915	121	Rodman	R	7 mo., cause unknown
18	Oct. 6, 1915	122	P.G.E.	R	9 yrs., alcoholism
19	Mar. 15, 1916	134	P.G.E.	R	Date and cause unknown
20	Apr. 1, 1916	135	Jejunostomy	R	6 mo. later, hemorrhage
21	May 15, 1916	138	P.G.E.	R	7 mo., cancer
22	Apr. 30, 1917	150	P.G.E.	R	4 yrs., cause unknown
23	Oct. 12, 1917	170	P.G.E.	R	1 mo. after leaving hospital, empyema
24	Mar. 11, 1918	188	P.G.E.	R	6 yrs., nephritis
25	Oct. 31, 1918	207	P.G.E.	R	2 yrs., tuberculosis
26	Sept. 27, 1919	233	P.G.E.	R	6 mo., sudden heart failure
27	Sept. 17, 1920	255	P.G.E.	R	4 yrs., carcinoma of stomach
28	Jan. 15, 1921	262	P.G.E.	R	3 mo., pneumonia
29	May 6, 1921	276	P.G.E.	R	Cause and date unknown
30	Apr. 4, 1925	383	P.G.E.	R	6 mo., heart trouble
31	June 23, 1925	392	Pyloroc.	R	6 mo., recurrence
32	Jan. 18, 1927	448	P.G.E.	R	9 mo., carcinoma

Details and date of death of two other cases not available.

and 2 inches distant. The jejunum is located, picked up, and directed toward the left side. At a point which will make suturing comfortable, the jejunum is picked up with another pair of Allis forceps about one-half inch from the upper leaf of its mesentery. Two inches farther on toward the left, another pair of Allis forceps is placed (fig. 1). A folded gauze tape sponge is now placed between the stomach and the jejunum. A straight needle threaded with fine linen thread [2] picks up the proximal jejunum and distal stomach beneath the two pairs of forceps so located. This is tied, left long and used as a traction loop. A similar loop is placed beneath the other two pairs of Allis forceps. These threads are left 4 or 5 inches long. With them the site of anastomosis is easily brought into the wound. The transverse colon and omentum is pushed inside the abdomen and moist gauze sponges are packed around the field of operation to avoid contamination of the peritoneal cavity or the abdominal wall incision.

Dr. W. H. Lang of Vancouver, B. C., has devised a very ingenious little frame [3] which serves admirably as a holder for these traction loops, consisting of a small rectangular iron frame with a standard or button on each end piece. These traction loops are given one turn around the button, which very effectually holds the line of suture in place (fig. 2).

Interrupted fine linen sutures are used. The first is placed midway between the two traction loops. Each of the remaining spaces is divided by a suture and each of these is again divided. The linen is fine and is cut very close to the knots. Another deeper layer of sutures is then placed, and should include the muscularis (fig. 3). They may be in the form of quilt sutures or simple sutures at the pleasure of the operator. The index finger of the left hand of the operator is

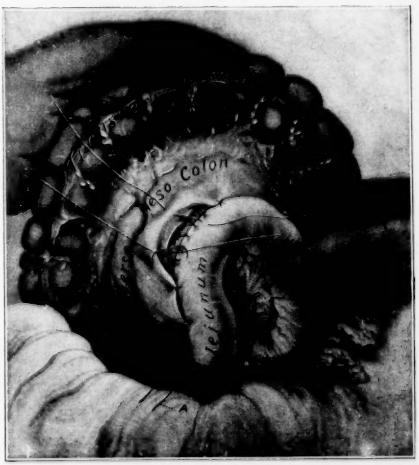

Fig. 8.—A further fold of mesocolon is drawn down so as to cover the anastomotic suture line.

now passed underneath the line of suture, which holds the viscera firmly, while the operator with his knife in his right hand carefully cuts down to the mucosa of

2. The thread is obtained from Turnbull & Wilson, 60 South Bridge, Edinburgh, Scotland. It was recommended to me by Sir Harold Stiles of Edinburgh.

3. The frame may be obtained from Sharp and Smith, 65 East Lake Street, Chicago.

the two viscera. A fairly small round curved needle carrying a double suture of number 0 chromic catgut places a continuous lock stitch beginning at the end of the incision nearest the operator and penetrating the mucosa of both viscera, including all the layers as far as the distal end. By using the curved needle, it is possible to continue the lock stitch almost around the front half of the anastomosis, thus saving half of the moves made with the quilt suture. In closing the last half inch of the incision, the right angle stitch is necessary. For purposes of strength in hemostasis, I usually return across the front line with the continuous running catgut suture placed from the outside. Another row of fine interrupted linen peritoneal sutures is now placed (fig. 6). The transverse colon with its omentum is now drawn out, and with the fingers of the left hand the opening is examined from the stomach side. The opening usually lies at right angles to a line drawn from the left shoulder to the left hip, and the tips of the index and middle fingers should pass through it. The edges of the mesocolon are now attached to the stomach wall with fine linen (fig. 7). If the mesentery is thin and long, it is well to bring down a fold of mesentery with another row of fine interrupted sutures so as to cover the main line of anastomosis. The angle between the jejunum, mesentery and stomach should be closed with sutures (fig. 8).

611 Lovejoy Street.

FRACTURES OF LUMBAR VERTEBRA DUE TO HYPEREXTENSION AND EXTREME MUSCULAR ACTION

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Compression fractures of the bodies of the vertebrae due to forced hyperflexion of the spine are of common occurrence. They are usually the result of a fall from a height or of other severe trauma. Because fractures of the vertebrae are usually associated with severe trauma, many fractures are overlooked if there is no history of a severe trauma or if there are no neurologic symptoms.

Owing to the fact that fractures of the vertebrae occur as a result of sudden hyperextension and of extreme muscular action, and in the absence of any apparent severe trauma, they are frequently not diagnosed but are treated as back strain or sacro-iliac strain. Frequently, when there is a history of so slight a trauma and little objective and subjective evidence of injury, a roentgenogram may seem to some an unnecessary expense. Such cases are treated as back strain over a period of months, with continued disability, and may eventually be diagnosed traumatic neurosis, unless a roentgenogram is, as a last resort, thought necessary.

It is well to remember that a disabling fracture of the lumbar vertebrae may be caused by a seemingly simple or slight accident. While fractures of the transverse processes of the lumbar vertebrae are in themselves of relatively slight importance in private practice, they are of considerable importance in industrial patients, especially if the patient has been told that he has a fractured spine.

If such cases are diagnosed wrongly as back strain, early physical therapy is usually instituted, which usually includes massage and early motion. Massage of these fractured fragments not only produces pain and delays or prevents union but tends to provoke continued back pain and various subjective symptoms which are eventually diagnosed as neurasthenia or neurosis.

MECHANISM

While forced hyperflexion of the spine is the usual mechanism in compressed fractures of the vertebrae, chip fractures, such as occurred in case 1 of this series, result from sudden hyperextension, associated with extreme muscular contraction of the extensor muscles of the spine. This produces a rupture of a portion of the anterior longitudinal ligament or its adjacent fibrocartilage which carries with it a portion of the cancellous bone of the vertebral body.

In fractures of the transverse processes of the lumbar vertebrae due to sudden extreme muscular action, the fracture is usually transverse and near the middle of the transverse process. In patients who did not give a history of having actually fallen, or who could not have been struck by any object, the fracture involved the second, third or fourth transverse process. In only three of the sixteen cases reported here was the first transverse process fractured.

Fig. 1 (case 1).—Small fragment of bone pulled from anterior lip of the third lumbar vertebra as a result of sudden forced hyperextension.

The quadratus lumborum muscle attaches to the apexes and the upper borders of the first four lumbar transverse processes. The longissimus dorsi, psoas major, multifidus, and intertransversalis muscles attach to these transverse processes, but their attachments are such that the force exerted by them does not come on the tips of the processes. While they may aid to some extent or at least may hold the spine immovable, they must be only of secondary importance to the quadratus lumborum in the production of such fractures.

The majority of these fractures occur in men of excellent muscular development. In the cases here reported the average age was 30.9 years. Of this series of sixteen cases of fracture of the transverse processes, five were the result of sudden extension and twisting of the spine. Unquestionably the fractures occurred as the result of sudden extreme muscle pull. Eight of these cases were the result of a fall, but as far as the patient knew they were not struck across the back and there was no objective evidence of a contusion found on examination. These fractures apparently were the result of sudden muscular action either in the act of falling or as a result of the added strain of the

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body weight in alighting. Three patients gave a history of having fallen on their back, and two showed evidence of contusions in the lumbar region.

REPORT OF CASES

CASE 1.—A well developed man, aged 22, stated that, while carrying a heavy can weighing about 50 pounds (23 Kg.), he tried to step over a water pipe which was coated with ice. His foot slipped on the ice and to keep from falling he was thrown backward, twisting about at the same time. He did not fall down. There was severe sharp pain in the lumbar region; he felt very ill and could not continue working. The pain in the back was very severe and was made worse on any movement of the spine.

Fig. 2.—Fracture of the second, third and fourth right transverse processes; slight displacement of fragments.

Examination twelve hours after the accident showed localized tenderness in the region of the third lumbar vertebra. Pain was complained of on pressure along the entire lumbar spine and in the lumbar muscles. The patient experienced the most pain on attempts at hyperextension of the spine, although motions of the spine were limited in all directions because of muscle spasm. While there was moderate muscular rigidity there was no marked instability on standing. A roentgeon-ray examination, lateral view, revealed a chip fracture of the anterior superior lip of the body of the third lumbar vertebra. Examination one month after the accident showed absence of muscular rigidity, and very slight tenderness of the lumbar spine. There was little pain on flexion but attempts at hyperextension proved very painful and were limited. A roentgenogram showed beginning bony union of the fragment with the body.

CASE 2.—A man, aged 46, who all his life had done heavy muscular work, stated that he was pulling on a beam when it suddenly gave way, causing him to be thrown backward and twisting his body about. He immediately felt severe pain across the back but chiefly in the lumbar region of the right side. Examination showed quite marked muscular rigidity, limitation of motion, and pronounced instability. A roentgen-ray examination revealed a fracture of the transverse process of the fourth lumbar vertebra on the right side.

CASE 3.—A man, aged 40, on arising suddenly felt a sharp pain in the lumbar region which was so severe that he was unable to go to work. Examination showed the usual signs of back strain. The roentgenogram, however, showed a fracture of the transverse process of the third lumbar vertebra.

CASE 4.—A man, aged 36, in jumping from a boat to a platform lost his balance and was thrown backward but did not actually fall. He felt a sharp pain in the lumbar region and was unable to continue working. A roentgen-ray examination showed a fracture of the transverse processes of the third and fourth lumbar vertebrae, on the left side.

CASE 5.—A well developed youth, aged 20, stated that as he was going down stairs he slipped and twisted about, falling on his hip and hand. There was no evidence of a contusion in the lumbar region. The roentgenogram showed a fracture of the third and fourth transverse processes on the right side.

CASE 6.—A letter carrier, aged 40, stated that while delivering mail he slipped and fell on the sidewalk, and in falling twisted about so that he landed on his elbows and hip. There was no evidence of a contusion in the lumbar region. The roentgenogram showed a fracture of the transverse processes of the second, third and fourth lumbar vertebrae on the right side.

CASE 7.—A man, aged 34, stated that, while he was tightening the tool holder of a lathe with a wrench, the wrench slipped, causing him to be thrown backward. He had some pain in his back but continued work for two days. The pain became so severe after two days that he stopped work. The roentgenogram showed a fracture of the transverse process of the third lumbar vertebra on the right side.

CASE 8.—A man, aged 39, while at work was struck by a chain, which knocked him down. He felt some pain in the back but continued work for six days, after which the pains became so bad that he was forced to stop. There was no evidence of a contusion of the lumbar region. A roentgenogram showed a fracture of the transverse process of the third lumbar vertebra on the left side.

CASE 9.—A man, aged 30, stated that he fell from the bridge of a ship and became unconscious, so that he did not remember anything that happened. On regaining consciousness he had some pain in his back. There was no objective evidence of a contusion in the lumbar region. The roentgenogram showed a fracture of the transverse process of the third lumbar vertebra on the right side.

CASE 10.—A man, aged 24, stated that he fell, striking his side and back, and that since then he had had pain across the back. There was no evidence of a contusion of the lumbar region. The roentgenogram showed a fracture of the fourth transverse process on the left side.

CASE 11.—A man, aged 29, stated that he fell into the hold of a ship while at work. He was not sure how he alighted, but he thought that he struck on his head and shoulders. There was no evidence of a contusion of the lumbar region. The skull and entire spine were roentgenographed for evidence of fracture. The only fracture was that of the transverse processes of the first and second vertebrae on the right side.

Fig. 3.—Fracture of third and fourth transverse processes of the left side; very little displacement.

CASE 12.—A man, aged 23, stated that he fell from a ladder, landing on his right hip and side. Since then he had had pain in the right lumbar region. A roentgenogram revealed a fracture of the first transverse process on the right side.

CASE 13.—A man, aged 23, stated that he fell into the hold of a ship; he was unconscious and did not know how he struck. A roentgen-ray examination of the skull and entire spine was negative for fracture except for the transverse processes of the third and fourth lumbar vertebrae on the left side. There was no evidence of a contusion of the lumbar region.

CASE 14.—A man, aged 34, stated that while working in the engine room of a ship, which was extremely hot, he fainted, falling over on the floor. He complained of pain across the back. There was no evidence of a contusion in the lumbar region. A roentgenogram showed a fracture of the transverse process of the fourth lumbar vertebra on the right side.

CASE 15.—A man, aged 23, stated that he slipped and fell backward, falling on his back. Since then he had had pain in the lumbar region. There was no evidence of a contusion of the lumbar region but the roentgenogram showed a fracture of the first lumbar transverse process on the right side.

CASE 16.—A man, aged 24, stated that he cranked his car while it was in gear and the car started, pinning him against a chain across the passage way. He fell unconscious. There was evidence of contusions and abrasions about the lumbar region. The roentgenogram was negative except for fractures of the transverse processes of the second, third and fourth lumbar vertebrae on the left side.

CASE 17.—A man, aged 33, while at work was struck across the back by a steel cable which knocked him down. He was unconscious for a time. When he regained consciousness he complained of pain across the back. The lumbar region showed evidence of a contusion. The roentgenogram did not show any bony injury except for fractures of the transverse processes of the second, third and fourth lumbar vertebrae on the right side.

DIAGNOSIS

One may be led to suspect a fracture of the transverse processes or a chip fracture of the body by the history of a sudden extreme muscular action, the spine being hyperextended or twisted about in a successful attempt to escape a fall. This, together with the signs and symptoms of acute pain, definite point of tenderness, limitation of motion, muscular rigidity and resulting instability should make one suspicious that the injury is more than a back strain. The diagnosis can be made only by means of the roentgenogram. Absence of bony injury can be determined only after the spine has been examined roentgenographically in both the lateral and the anteroposterior planes.

Fig. 4.—Union occurring after immobilization.

TREATMENT

The treatment of fractures of the transverse processes and those due to hyperextension of the spine is the same as for fractures elsewhere—rest and immobilization. In fractures of the transverse processes with marked muscle spasm, resulting in marked instability when attempting to stand, the patient may be placed on a Bradford frame for a few days, or, if a Bradford frame is not available, boards may be placed beneath a firm mattress to prevent sagging and to prevent any spring. A very small pillow beneath the lumbar curve may make the patient more comfortable. No pillow under the head or at most a very small one places the spine in satisfactory extension. If the patient is noncooperative, a cast should be applied at once. In cooperative patients, however, the cast can be applied with less pain and discomfort if the preceding days have been spent quietly at rest with the spine in extension. The plaster jacket may be worn for a period of from four to six weeks or longer if the acute symptoms, characterized by pain and muscle spasm, persist beyond that period.

In from four to six weeks, in the majority of patients, the cast can be cut and removed daily for physical therapy measures, or if all acute symptoms have disappeared, the cast may be left off permanently after that period.

A belt of woven webbing may be necessary for a time, as there are frequently associated ligamentous strains, which may require some support for a period of three months or longer.

In recent fractures of the transverse processes there is nothing to suggest that any operative procedure is either advisable or necessary.

Old unrecognized fractures of the transverse processes, which have been treated as back strain by lack of immobilization, and by massage and early motion, with resulting nonunion or fibrous union, and with a continuation of obscure and intractable pain in the back, may be considered as operative cases should immobilization and rest not give permanent relief.

CONCLUSIONS

Fractures of the transverse processes or chip fractures of the lumbar vertebrae are of relatively frequent occurrence and are due to forced hyperextension of the spine or to sudden extreme muscular action. There may be a history of only the slightest trauma. They are frequently not diagnosed because the history of so slight a trauma, to some, does not seem an indication for a roentgen-ray examination.

A roentgenogram taken in two planes is indicated in all cases of so-called back strain, even though the history of the trauma may seem insignificant.

Patients with fractures of the transverse processes, undiagnosed, and treated as back strain, with deep massage and early motion, continue to have pain and frequently are diagnosed as having traumatic neurosis.

The early treatment of chip fractures of the bodies of the lumbar vertebrae, or fractures of the transverse processes, should be the same as for fracture elsewhere—rest and immobilization.

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The Competitions and the Conflict Over Difference.—Aside from the factors of physical constitution . . . any chronic disease which reduces the capacity of the individual to perform in any way, particularly muscularly (or, as we commonly say, physically), such as chronic heart disease, chronic tuberculosis, certain types of chronic thyroid disorders, the crippling effects of infantile paralysis, and so on through a long list of interfering, but not completely disabling chronic diseases—any of these is sufficient to produce a marked difference in the child in competition with its fellows. When the difference exists, there usually develops some emotional conflict and then some type of disturbance in behavior or adjustment. These cases are most difficult indeed in treatment. . . . Let me summarize, then, by saying that differences, real or imagined, which the individual sees or feels between himself and his own ideals or what he conceives to be the ideal of the group, occurring in any aspect of physical, mental or social life, may and do produce profound emotional conflicts and all the various types of disturbing behavior, the latter representing an attempt at compensation such that the individual will have a satisfied ego and a feeling of security in the group.—Lowrey, L. G.: Competitions and the Conflict over Difference, *Ment. Hyg.*, April, 1928.

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EXPULSION OF ITS CONTENTS AS A FUNCTION OF THE GALLBLADDER

A CLINICAL APPLICATION *

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AND
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Certain physiologic activities of the gallbladder became susceptible of clinical study when Graham and Cole devised a method for the roentgenographic visualization of this organ. Its two proved actions are concentration of the bile within it and discharge of its contents at certain periods, particularly during the digestion of fat. Both these functions are utilized now in estimating the condition of the gallbladder by cholecystography. In a well conducted intravenous test, the entire failure of visualization or the presence of an extremely faint shadow constitutes excellent evidence of a pathologic condition of the gallbladder, except in extremely severe disease of the liver, obstruction of the biliary system, and in those rare instances of absence of the gallbladder. Many of the cases in which the clinical picture is frankly that of cholecystic disease fall into this group. However, in the diagnostic problem, when help from cholecystography is especially important, the shadow often appears to be of slightly decreased density but not sufficiently so as to be beyond the limits of the so-called normal. In such important instances, the relative density of the shadow alone fails to establish the functional condition of the gallbladder, and the testing of its response to a fat meal assumes a prime importance. As Milliken and Whitaker [1] first demonstrated, the visualized human gallbladder normally shrinks rapidly in size following the ingestion of certain fat-rich foods. This has proved to be so characteristic a reaction that it has now become a routine part of the cholecystographic examination. Thus, there is general agreement that the gallbladder is partially emptied during fat absorption, but there are a variety of opinions as to what causes this phenomenon. In this paper it is our purpose to report an analysis of some of the factors involved in the emptying of the gallbladder by fat. We feel that such knowledge is essential for the correct interpretation of human cholecystograms.

Many hypotheses have been advanced to account for the emptying of the gallbladder. These can be divided into two groups, suggesting (*a*) that the gallbladder has a passive rôle in this process, and (*b*) that the gallbladder empties as a result of the contraction of its own musculature.

The chief mechanical factors suggested are: (1) variations in intra-abdominal pressure; (2) intestinal peristalsis; (3) elastic recoil following relaxation of the common duct "sphincter," and (4) the washing out of the gallbladder by hepatic bile.

1. The fact that the gallbladder may remain full for many days during fasting and that the violent struggling associated with tube feeding in the cat does not produce any discharge of its contents [2] is sufficient evidence that variations in intra-abdominal pressure, within physiologic limits, do not cause emptying of the gallbladder.

2. Vigorous intestinal peristalsis produced by physostigmine, as well as by the normal movement of a barium meal [2] or a starch meal [3] through the intestine without effect on the gallbladder containing iodized oil, would seem to rule out intestinal peristalsis as a significant factor.

3. Though the common duct "sphincter" be completely excluded by a rubber tube,[4] a fat meal will induce emptying of the gallbladder; it will even empty through a cannula in the cystic duct [5] or the cut end of the common duct.[6] By similar experiments, we have repeatedly confirmed the fact that the emptying of the gallbladder is not dependent on relaxation of the terminal portion of the common duct. Also, in two of our cats whose gallbladders had been previously filled with iodized oil, the hepatic and common ducts were injected from the gallbladder after the oral or intravenous administration of fat before any oil was discharged into the duodenum (fig. 1). This can scarcely be interpreted in any other manner than as evidence against an obligatory reciprocal mechanism, and is even suggestive of occasional antagonism of the common duct "sphincter" to the expulsive action of the gallbladder.

Fig. 1.—*A*, cat's gallbladder partially filled with iodized oil; *B*, same cat two hours after egg yolk feeding. Expulsion of the iodized oil from the gallbladder has injected the hepatic ducts, though none of it has been forced out into the duodenum.

4. After gradual elimination of the preceding factors by accumulated experimental evidence, the mechanical hypothesis now rests chiefly on the washing out of the gallbladder by hepatic bile assisted by the elasticity of this organ.[7] On the basis of clinical evidence, it seems unlikely that the ebb and flow of hepatic bile plays a significant rôle in the emptying of the human gallbladder in response to fat. After a fat meal the density of the cholecystic shadow is often significantly increased, while its volume is greatly diminished.[8] Apparently this must be due to active concentration of its contents by the gallbladder during the emptying phase. On physical

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grounds it would be extremely difficult to reconcile this concentration with any extensive dilution, such as would result if the emptying of this viscus were caused by washing out with hepatic bile.

Abundant evidence has been presented recently that the gallbladder musculature contracts.[9] But, as Graham has stated, "The real question . . . is not whether contractions occur but whether they are able to empty the gallbladder."[10] He reported that the gallbladder did not empty if the hepatic ducts were occluded, and from this he inferred that intrinsic contractions of the gallbladder wall, aside from the factor of elastic recoil, were insufficient to empty that viscus. Very recently, further evidence of this type has been presented by Copher and Illingworth.[5] We accept as critical in the evaluation of these factors the effect of fat feeding on the gallbladder with hepatic bile excluded. Consequently, we have repeated this experiment. Normally in the dog the gallbladder is not entirely emptied by fat feeding, whereas in the cat the process is usually much more complete. For studying the mechanism involved in the response of this viscus to fat, therefore, we consider the cat much preferable to the dog. Using ether anesthesia in two cats we freed the common duct and ligated all ducts opening into it except the cystic duct, and then filled the gallbladder with iodized oil (iodipin) according to the method originally described by one of us.[2] This ligation of all hepatic ducts was proved at

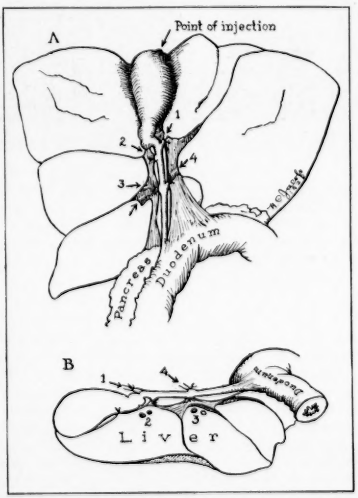

Fig. 2.—The complete ligation of all hepatic ducts (as proved by dissection at autopsy).

autopsy to be complete (fig. 2). The same day the cats were fed egg yolk and cream. In spite of the fact that the digestion of fats must have been considerably altered by the absence of bile in the intestine, the gallbladders of both animals partially emptied. In one of them the gallbladder responded by the discharge of more than 90 per cent of its contents into the duodenum (fig. 3). On postmortem examination this cat's gallbladder was found to be practically empty. This is the typical response of the cat's gallbladder to fat feeding, and it occurred when the hepatic bile was entirely

Fig. 3.—Same cat as shown in figure 2: *A*, five hours after ligation of all hepatic ducts and filling the gallbladder with iodized oil. *B*, one and one-half hours after feeding: The gallbladder has forced a large amount of oil into the intestine, and the cystic and common ducts are full of oil. *C*, seven hours after feeding: A large mass of oil is in the intestine; the gallbladder is more than half empty; emptying time was somewhat slower than normal. *D*, Twenty-four hours after filling the gallbladder with iodized oil and after three feedings of yolk and cream at intervals of several hours. The gallbladder is nine-tenths empty. Note the large globules of oil in the intestine, which do not appear if bile is present.

excluded. These results are similar to those obtained by Higgins and Mann,[9] except that the emptying process was carried much further in our experiment. They are obviously impossible of explanation on the basis of dilution of the contents of the gallbladder with hepatic bile, assisted by the elastic recoil of the viscus. Therefore an affirmative answer to the question raised by Graham seems necessary; viz., contractions of its musculature are able to empty the gallbladder.

We have considered in succession the mechanical processes which have been suggested as causing discharge of bile from the gallbladder and have shown that increased intra-abdominal pressure and intestinal peristalsis under physiologic conditions do not produce this effect; that the discharge of material from the gallbladder is even at times initiated against the antagonism of a closed common duct "sphincter," and that the usual emptying of the gallbladder proceeds to a normal extent in the cat with all the hepatic ducts occluded, far beyond any effect that could be explained on the basis of elastic recoil. The conclusion seems inescapable that the expulsion of its contents in response to fat feeding is a vital function inherent in the gallbladder musculature and independent of extrinsic and mechanical factors. As this study was confined to the emptying of the gallbladder in response to fat feeding, no new evidence is available in regard to the discharge of bile from the gallbladder under other conditions.

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As a practical corollary of this investigation it is necessary to bear in mind that the response of the gallbladder to fat feeding, as ordinarily shown during the course of a cholecystographic series, is a function of smooth muscle. The failure of the gallbladder to contract properly may be due to local pathologic causes, but it may also be dependent on factors affecting the irritability or contractile force of smooth muscle through the body.

CONCLUSIONS

1. Expulsion of the contents of the gallbladder in response to fat feeding is a vital function of its musculature and is independent of mechanical factors.

2. General conditions influencing smooth muscle tonus must be considered in interpreting the motor phase of any cholecystographic series.

Crittenden Boulevard.

MYOTONIA ATROPHICA

REPORT OF CASE

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The picture of myotonia with advanced atrophy of the muscles of the face, neck and extremities is striking and unmistakable, yet the disease appears to be one of great rarity in this country. In 1923, Adie and Greenfield[1] stated that the number of recorded cases approached 200, "though the time has not yet arrived when description of new cases is devoid of interest, for our information is incomplete on many points." These recorded cases have been largely in foreign publications, for I have been able to find reports of only nine cases in the American literature since the disease was described under this title by Rossolimo[2] in 1902. The case reported here exhibits the characteristic features of this rather unique disease.

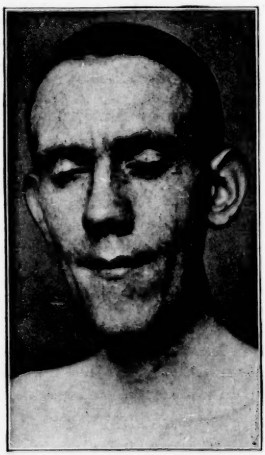

Fig. 1.—Patient is attempting to close eyes tightly and to smile.

REPORT OF CASE

History.—G. K., an unoccupied young man of 19, referred by Dr. E. K. Armistead for examination, complained chiefly of weakness of the hands. His father had died of pneumonia, his mother of intestinal obstruction. One sister was living and in good health. No history of neuropathic heredity could be elicited.

The patient had been a mouth-breather all his life, and for this reason the tonsils and adenoids had been removed in 1920. He stated that he had never been able to close his mouth completely, as the front teeth would not meet. At times, when excited, he had an attack of "nervousness" and trembling. He had completed the ninth grade in school. In 1925 he was told that he had pellagra, though the basis for this diagnosis was not apparent. He did not have any other symptoms referable to any part of the body, and had not had any serious illnesses, surgical operations or injuries.

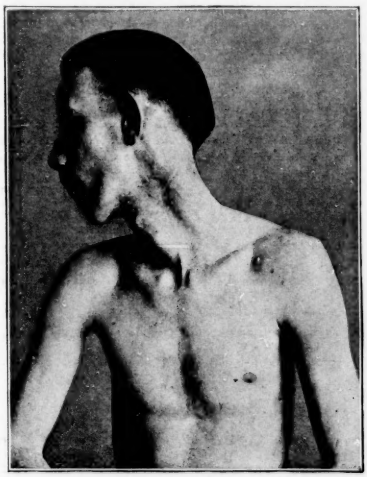

Fig. 2.—Head is turned forcibly to the right. Note myopathic facies. The vestige of the sternomastoid is seen as a small strand.

The patient believed that his hands had been weak all his life. This weakness did not affect any other part of his body, for he had recently been employed as a laborer in a railroad shop, where his work consisted in moving moderately heavy pieces of iron. This he accomplished by carrying them on his wrists and forearms, not grasping them in his fingers. He volunteered the information that when he forcibly grasped an object, even with his weak grip, he was not able quickly to let go of it, and that when he carried a heavy object in his hands and attempted to drop it, it seemed as though his hands froze there. This was first noticed in September, 1927, years after the appearance of atrophy of the forearms, the date of onset of which condition could not be determined. This slow relaxation of the muscles of the forearm could not be severe for he was able to play baseball, and furthermore he noticed it only when the muscles in question were put to their most strenuous effort. He also stated that it now seemed to be less marked than formerly, and it had never been present in any part except the hands. When questioned as to how long his face had shown its present long, thin contour he was uncertain, but it was found from a series of photographs obtained from a relative and covering his life from infancy to 17 years that the atrophy was not apparent at the age of 8 but was pronounced at 13. He believed that the weakness of his hands did not show any tendency toward improvement or progression. There had not been any muscular hypertrophies at any time. He was not impotent.

Examination.—The patient was ambulant and mentally clear. He was rather undernourished. The hair of the frontal

1. Adie, W. J., and Greenfield, J. G.: Dystrophia Myotonica (Myotonia Atrophica), Brain **46**: 73 (May) 1923.
2. Rossolimo, G.: De la myotonie atrophique, Nouv. iconog. de la Salpêtrière **15**: 63, 1902.

region was thin and receding. His face was long and narrow, with marked hollowing of the temporal fossae and of the cheeks. The angle of the jaw was much more obtuse than is normal. He was a mouth-breather. Ocular movements were perfect in all directions; the media were clear, and the fundi did not show any pathologic changes. The nasal passages were much underdeveloped and the palate was arched in a high vault. His speech was slow, nasal and monotonous, but the cause of this, whether weakness or myotonia, was not apparent. The mouth could not be completely closed as the molar teeth met before the incisors.

The teeth had a bluish and almost translucent appearance and were much decayed. There was an accumulation of sticky saliva between the cheeks and teeth, which was evidently due to weakness of the buccinators. All the muscles of the face, those of expression as well as those of mastication, were greatly atrophied. The forehead did not wrinkle when the patient gazed upward. He could not close his eyes tightly enough to wrinkle the skin about them. The temporals and masseters contracted very feebly. The cheeks were estimated

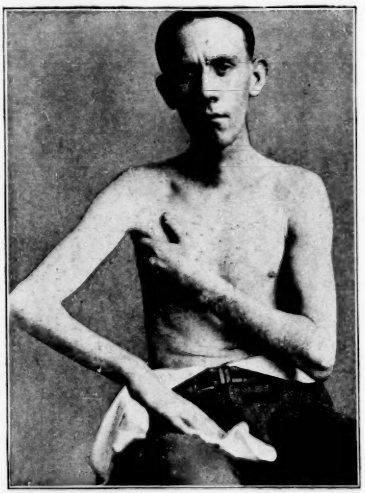

Fig. 3.—Atrophy of forearms.

to be about half their normal thickness. He was able to purse his mouth enough to whistle, but efforts to smile or to show his teeth were very much enfeebled (fig. 1). The neck was hollow in front and the sternal ends of the clavicles were unduly prominent, owing to an almost complete atrophy of the sternocleidomastoid muscles. When the head was forcibly rotated to either side, all that could be seen or felt of these muscles were two small strands, vestiges of their sternal portions (fig. 2). Myotonia was not present in any of the muscles of the face.

The muscles of the forearms were wasted to a marked degree, the flexors somewhat more than the extensors (fig. 3). All movements of the wrists and fingers were weak. The biceps, triceps and radial reflexes were absent. Myotonia of the hands was very slight and evidently could not cause the patient any inconvenience, though the weakness was seriously disabling.

There were no atrophies in any other muscle groups. All other deep and superficial reflexes were active and there were no abnormal reflexes. Sphincter action was intact. There were no genital abnormalities. There was no disturbance of touch, pain or vibration sense. Excitability of the facial and forearm muscles to both galvanic and faradic currents, especially the latter, was greatly reduced. There was no myotonic reaction, and no tonic perseveration of contraction or undulating contraction on continued stimulation with the galvanic current.

COMMENT

Whether myotonia atrophica is a clinical entity or a form of Thomsen's myotonia has been a disputed question. There is no doubt of the tendency of either to occur in members of the same families, as shown in the cases in brothers reported by Bramwell and Addis [3] and by Hunt,[4] and two others by Broadwin,[5] to mention only a few such instances. Pelz,[6] who regarded the disease as an atypical form of myotonia congenita, stated that atrophies occurred in 12 per cent of all cases of the latter and spoke of a "myotonia congenita adultorum." But certainly the atrophies in Thomsen's disease are not so extensive or of such characteristic distribution as in myotonia atrophica, and the myotonia in the congenital type is usually more widespread. Nor is myotonia atrophica a congenital disease, as it develops in the second or third decade.

Probably myotonia atrophica should be classed with the dystrophies. Hoffman [7] believed that progressive muscular atrophy could develop from myotonia. Steinert,[8] from his own observations and those reported in the literature, believed it to be a special form of myopathic dystrophy with preponderating involvement of the muscles of the face, neck, forearm and hand. Batten and Gibb [9] regarded the atrophy as primary and the myotonia as only a symptom. It is true that there is the greatest variation of each in individual cases. Adie and Greenfield in their extensive study of the subject adopted the term dystrophia myotonica, which had been proposed by Curschmann, and believed that the condition was a disease *sui generis*. The pathologic changes in the muscles do not in any way resemble those of the atrophies of nervous origin but are similar to, though not identical with, those of the more common dystrophies.

The abiotrophic nature of the disease, proposed by some authors, is suggested by the frequent observation of degenerative defects in its subjects, such as underdevelopment and undernutrition, baldness, high-arched palate, speech disturbances, cataract, genital hypoplasia and impotence.[10]

610 Martin Building.

3. Bramwell, E., and Addis, W. R.: Myotonia Atrophica, Edinburgh M. J. **11:** 21, 1913.
4. Hunt, J. R.: Myotonia Atrophica, J. Nerv. & Ment. Dis. **59:** 269 (April) 1908.
5. Broadwin, I. T.: Myotonia Atrophica, New York M. J. **113:** 190 (Jan. 29) 1921.
6. Pelz, quoted by Keschner, M., in Tice, Frederick, Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc. **10:** 375, 1917, and also by Oppenheim, H.: Lehrbuch der Nervenkrankheiten, ed. 6, Berlin, Karger, **1:** 331, 1913.
7. Quoted by Oppenheim: Lehrbuch der Nervenkrankheiten, ed 6, p. 333.
8. Quoted by Oppenheim: Lehrbuch der Nervenkrankheiten, ed. 6, p. 333.
9. Batten, F. E., and Gibb, H. P.: Myotonia Atrophica, Brain **32:** 187, 1909.
10. Additional case reports and articles of interest are:
Hamill, R. C.: Myotonia Atrophica, Arch. Neurol. & Psychiat. **3:** 680 (June) 1920.
Bullowa, J. C.: M. Rec. **83:** 131 (July 18) 1914.
Martin, J. P.: A Case of Myotonia Atrophica, Proc. Roy. Soc. Med. (Sect. Neurol.) **17:** 28, 1923-1924.
Keschner, M., and Finesilver, B.: Myotonia Atrophica, J. Neurol. & Psychopath. **5:** 341 (Feb.) 1925.
Adie, W. J.: Dystrophica Myotonica, Proc. Roy. Soc. Med. (Sect. Neurol.) **16:** 36 (March) 1923.
Fearnsides, E. G.: A Case of Myotonia Atrophica, Rev. Neurol. & Psychiat. **13:** 311, 1915.
Kennedy, Foster; and Oberndorf, C. P.: Myotonia Atrophica, J. A. M. A. **57:** 1117 (Sept. 30) 1911.
Kennedy, Foster: Myotonia Atrophica, J. A. M. A. **61:** 1958 (Nov. 29) 1913.
Greenfield, J. G.: Notes on a Family of Myotonia Atrophica and Early Cataract, Rev. Neurol. & Psychiat. **9:** 169 (March) 1911.

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PULMONARY ACTINOMYCOSIS

REPORT OF A CASE IN A TWO AND ONE-HALF YEAR OLD CHILD *

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AND
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Human actinomycosis appears to be relatively uncommon in this country. Sanford and Voelker [1] could collect reports of only 670 cases that occurred in this country, forty-two of which were in children under 15 years of age. A survey of the literature on this subject reveals a scarcity of reports of this disease, and one is almost led to believe that actinomycosis, particularly in infants and children, is extremely rare. Recently, Gittings and Thorpe [2] reported a case of pulmonary actinomycosis in a boy, aged 5 years. Lindsay [3] found the disease in an 8 year old child, and Erving's [4] analysis of actinomycosis in 100 American cases revealed the condition in a child 6 years of age. Our patient is the youngest on record and illustrates the difficulty that may arise in arriving at a correct diagnosis, particularly in the pulmonary form of actinomycosis, until a postmortem examination is performed.

REPORT OF CASE

History.—H. S., a colored girl, aged 2½ years, was admitted to the children's ward of the Cook County Hospital, June 24, 1927, because of cough of three months' duration, associated with night sweats and "rattling in the chest" for a similar period.

The patient was born and reared in Chicago. She had never been exposed to the possibilities of rural infection. The medical and surgical history was negative except for occasional "colds." The family history was negative for all chronic diseases, including tuberculosis and syphilis. The child had been breast-fed for the first four months of life and this had been followed by cow's milk and a limited general diet. Cod liver oil and orange juice were given in indefinite amounts at irregular intervals. Dentition was retarded, and the child had not yet begun to walk.

Physical Examination.—The child was undernourished but did not appear acutely ill. The temperature on admission was 102 F. rectally; the pulse, 120, and respirations, 24. Rachitic deformities of the head, ribs and extremities were striking. There was no dyspnea, cyanosis or clubbing of the fingers. The mouth showed minute gray raised areas on the buccal and faucial mucosa as well as on the hard palate. Ulcerations were not seen. The teeth showed marked neglect and poor enamelization. There was a fetid odor to the breath. The chest showed marked dulness to percussion over the upper two thirds of the right lung, anteriorly and posteriorly. Bronchial breathing and increased vocal transmission were associated conditions in this area. An occasional râle was heard throughout the remainder of both lungs. Aside from these observations, the remainder of the physical examination was essentially negative.

The blood on admission showed 15,400 leukocytes; 72 per cent polymorphonuclears; 24 per cent small and large lymphocytes; 3 per cent transitionals, and 1 eosinophil. The results of the urinalysis were negative. The Wassermann reaction of the blood was negative. A direct smear and culture from the mouth grown on Loeffler's medium showed the presence of ordinary micro-organisms. A roentgenogram of the chest taken the day following admission to the hospital revealed consolidation of the upper two thirds of the right lung. Pirquet test and intradermal injection of 0.1 mg. of old tuberculin were negative.

A tentative diagnosis of right upper and middle pulmonary infiltration, probably tuberculous, was made.

Course of Illness.—The patient continued to have a temperature ranging between 99 and 101 F. rectally. She coughed a great deal. The lung condition appeared stationary. She spent most of her time sitting in her crib playing. She was put on a general diet. Cod liver oil was administered daily and she received biweekly quartz light exposures.

July 15, twenty-one days after admission, a roentgenogram of the chest showed the previous conditions, and in addition small cavities in the right apex were suggested. Four days later, a density could be seen obscuring the whole right lung almost to the level of the diaphragm (fig. 1).

July 21, a swelling appeared over the right pectoral region. It was moderately tender, was cool, was not reddened, and extended from the right sternal margin to the right midpectoral line. It was situated over the second and third ribs and measured 5 by 11 cm. There was a suggestion of fluctuation. Examination of the chest did not reveal any further change in the lung. The patient's general condition seemed unchanged and the cellular constituents of the blood were the same as

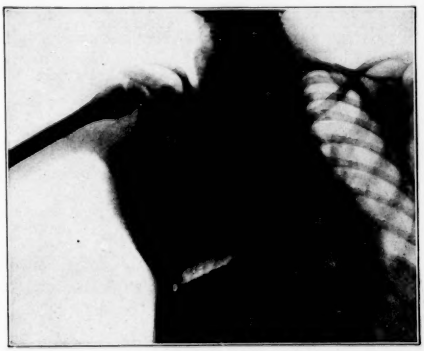

Fig. 1.—Dense shadow visible in the right lung almost to the level of the diaphragm.

before. The course of the temperature remained the same. Aspiration of the swelling revealed a greenish yellow thick purulent material which on direct smear showed many pus cells, a few diplococci and no tubercle bacilli. Culture of this material was sterile, and a guinea-pig inoculation gave negative results for tuberculosis.

July 25, the pectoral swelling had increased to almost twice its former size and now seemed "boggy," suggestive of empyema necessitans. Aspiration was repeated with the same results as were previously obtained. A small incision was made over the most fluctuant area and a pint of foul green pus was recovered. Tubercle bacilli were again looked for with the same negative results. Cultures were again sterile. Roentgen-ray examination at this time showed the right lung field obscured throughout, which condition was interpreted by the roentgenologist as suggestive of pneumonic consolidation with a slight amount of fluid in the right base.

Surgical consultants agreed with the diagnosis of cold abscess secondary to the tuberculous process in the lung and tuberculous periostitis of the ribs underlying the swelling. No further surgical intervention was deemed necessary. The wound of the incision failed to heal and was replaced by a sinus with thick indurated walls. A grayish thick material continued to drain.

Roentgen-ray examination, August 1, revealed in addition to the previous conditions erosion of the second, third and fourth ribs on the right side in the anterior axillary line.

* From the Pediatric Department of the Cook County Hospital.

1. Sanford, A. H., and Voelker, Minna: Actinomycosis in the United States, Arch. Surg. **11**: 809 (Dec.) 1925.
2. Gittings, J. C., and Thorpe, E. S.: Pulmonary Actinomycosis: Report of a Case, Am. J. Dis. Child. **32**: 50 (Oct.) 1926.
3. Lindsay, L. M.: Case Report of Actinomycosis in a Child Eight Years Old, Canad. M. A. J. **17**: 944 (Aug.) 1927.
4. Erving, W. G.: Actinomycosis Hominis in America with Report of Six Cases, Bull. Johns Hopkins Hosp. **13**: 261 (Nov.) 1902.

August 4, the patient was released from the hospital. Her general condition at that time seemed unchanged from that on admission.

September 6, she was readmitted to the hospital. Her father stated that the swelling in the pectoral region was increasing in size, and that the cough had continued.

Physical examination at this time revealed normal temperature, pulse and respirations. The patient appeared to have lost considerable weight but did not seem acutely ill. In addition to the lung conditions present when she was discharged, amphoric breathing was now heard over the right upper lobe anteriorly and numerous coarse râles were present in the right base, posteriorly. The left lung was apparently uninvolved. The pectoral swelling now measured 8 cm. in diameter. The sinus was still discharging a purulent material which now contained grayish granules. Direct smears of this discharge did not reveal any organisms of the mycotic group. All previous laboratory examinations were repeated and the results that were obtained were the same as before. A roentgenray examination of the chest that was made at this time was unsatisfactory.

October 17, the course of the disease and the lung condition had remained apparently unchanged. While receiving a three minute quartz light exposure at a distance of 24 inches, the patient had a sudden severe hemoptysis. Another one occurred within the next eighteen hours, to which she succumbed.

Necropsy.—The anatomic diagnosis at autopsy, which was performed by Drs. P. Schmidt and R. A. Lifvendahl, was: (1) actinomycosis of the right lung with secondary gangrene,

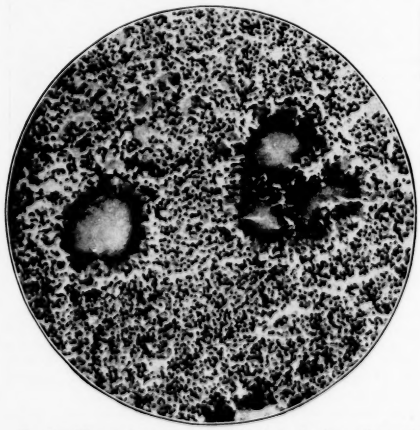

Fig. 2.—Microscopic section of right lung showing actinomycotic involvement.

abscess formation and perforation of the chest wall; (2) focal bronchopneumonia of the right lung; (3) erosion of the second, third and fourth ribs; (4) right obliterative pleuritis; (5) acute hyperplasia of the tracheobronchial lymph glands, and (6) cloudy swelling of the parenchymatous organs. Bacteriologic examination by direct Gram smears of the abscessed lung cavity showed gram-positive short-chained streptococci, pneumococci and staphylococci. A culture of the same material yielded *Staphylococcus albus-hemolyticus.* Organisms of the mycotic group were looked for but were not found. Microscopic sections of the affected lung revealed the typical actinomycotic structure and secondary bronchopneumonia (fig. 2).

COMMENT

It is evident that the clinical course of pulmonary actinomycosis and tuberculosis may simulate each other very closely.[5] It has also been confused with empyema necessitans.[6] The differential diagnosis is usually dependent on the laboratory results, viz., recovering the specific fungus, but in this case repeated examinations did not reveal its presence. It is altogether likely that this case would have gone on record as one of pulmonary tuberculosis had autopsy not been performed.

In spite of the relative infrequency of human actinomycosis in this country, it is felt that more case reports might be added to the present scanty literature on the disease if the clinician would remember to consider actinomycosis in the more atypical conditions, such as has been presented. Bacteriologic observations may be negative and still the disease may be discovered on necropsy.

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SKIN ERUPTIONS WITH PHENOBARBITAL (LUMINAL)

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Phenobarbital (luminal) has found increasing usage since its introduction in 1913, as an anticonvulsant and as a sedative. At present it is probably the most commonly used sedative and undoubtedly the most extensively used (effective) anticonvulsant, but there are relatively few reports in the literature of toxic reactions from this drug. One of the untoward manifestations of the toxic effect is a skin rash, which undoubtedly occurs much more frequently than the reports in the literature would indicate. At present, however, fifteen years after the introduction of this drug, there are forty-one published reports of this type of reaction.

The following three cases from the Menninger Clinic are the only cases in which the skin rash appeared in approximately 400 cases in which phenobarbital has been used.

REPORT OF CASES

CASE 1.—A physician's wife, aged 63, had been given phenobarbital, 0.1 Gm. (1½ grains), three times a day for five days for insomnia. Each dose was mixed with 0.3 Gm. (5 grains) of sodium bicarbonate. On the fourth day, she complained of undue sleepiness during the afternoon and evening. On the fifth day, she complained of dizziness and felt queer, "as if she were 6 or 8 feet tall," and her head felt "wuzzy." The phenobarbital was discontinued, and four days later a diffuse erythematous macular skin rash appeared, reaching its height the day following its appearance. There were no other symptoms and the rash gradually began to disappear within a week, without subsequent sequelae.

CASE 2.—A girl, aged 10, under treatment for a typical, moderately severe chorea minor of three months' duration, had a heart murmur and albuminuria, and constantly had a temperature of about 99.4 F. The child was given methenamine, 0.3 Gm. (5 grains), every four hours, and phenobarbital sodium, 0.06 Gm. (1 grain), three times daily for two days, and then 0.06 Gm. (1 grain) twice daily for seven days.

On the ninth day, she manifested a slight sprinkling of erythematous points over the upper part of the chest and back which was thought to be due to irritation by the sheet from the constant motion. The following day the phenobarbital sodium was stopped but the rash had increased; the points became macular, from 1 to 3 mm. in diameter, more numerous, deeper in color, and extended lower down on the body. Within the

5. Besser, Herman: Actinomycosis of the Lungs Simulating Tuberculosis, New York M. J. **117**: 623 (May 16) 1923. Yabe, N.: Kekkaku **5**: 33 (April) 1927. Shibata, M., and Ishikawa, T.: Kekkaku **5**: 29 (April) 1927.

6. Lemon, W. S.: Pulmonary Actinomycosis: Report of a Case, Minnesota M. J. **9**: 211 (April) 1926. Lindsay (footnote 3).

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next day or so, they had extended all over the body and became increasingly numerous, so that the child was spotted as in an extremely severe case of German measles. The spots were larger than those of typical scarlet fever. There was slight itching at first but this soon disappeared. Some of the macules coalesced and others seemed to increase in size so that there were numerous larger and smaller macules. She did not have any fever or leukocytosis.

By the end of the first week the intensity of the rash had considerably faded with a fine, branny desquamation, but the pink color was being replaced by a light brown, which seemed to be a definite pigmentation. The child continued to improve to such a degree that the chorea was entirely gone in three weeks; the rash had also faded considerably but was still definitely in evidence on the thighs and the back of the neck. Six months later the pigment spots were less distinct but still in evidence despite much sunburn.

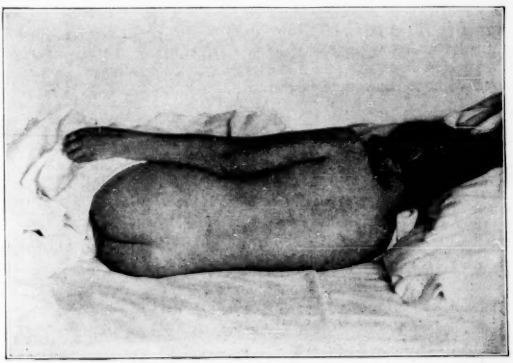
CASE 3.—A woman, aged 26, with a mild depression and insomnia, was given phenobarbital, 0.1 Gm. (1½ grains), once a day. On the fifteenth day of this treatment, she developed a temperature of 100 F., which returned to normal for two days, to return on the eighteenth day to 100, and to 104.2 on the subsequent two days. On the seventeenth day she developed a cervical lymphadenitis and a headache, and on the twentieth day she presented a macular erythematous rash over the chest and arms. She vomited and complained of numbness in the hands. Her face was swollen. She was receiving daily ultraviolet ray exposures and it was thought that the rash might be due to the irradiation. The treatments were stopped, and the phenobarbital, unsuspected, was continued. The temperature returned to normal for eight days and the erythema partially subsided, but again on the twenty-eighth day became more marked and extensive than at any previous time. The conjunctivae and pharynx were involved, and a scarlatiniform eruption covered the entire body, face and extremities. The temperature again rose for two days to 102, to return to normal. The rash appeared so much like scarlet fever that the patient was placed under quarantine from the twenty-eighth to the thirty-seventh day. The Dick test was made, with a negative result.

Phenobarbital was continued, still unsuspected, until the thirty-fifth day, when it was stopped, fifteen days after the acute symptoms had appeared and five days after the rash had reached its height. It gradually disappeared with a fine-scaling desquamation and no subsequent pigmentation, twenty days after its first appearance. Phenobarbital was subsequently given for five days, 0.1 Gm. daily, without any recurrence.

TABLE 1.—*Recorded Frequency of Phenobarbital Eruptions*

Date	Reference	Total Cases	Skin Eruptions
1912	Loewe, S.: Deutsche med. Wchnschr. **38**: 947, 1912	300	3
1912	Graeffner: Berl. klin. Wchnschr. **49**: 869, 1912	72	2
1913	Hoven, H.: Bull. Soc. de med. ment. de Belg., no. 171, December, 1913	35	3
1913	Bleichert, E.: Ugesk. f. Læger **75**: 1149, (July 3) 1913	13	3
1912	Eder, quoted by Bleichert	150	2
1920	Grinker, Julius: J. A. M. A. **75**: 588-591 (Aug. 28) 1920	100	2
1921	Golla, F. L.: Brit. M. J. **2**: 230 (Aug. 27) 1921	125	2
1922	Greenwald, J. G.: New York M. J. & Rec. **116**: 355 (Sept. 20) 1922	105	3
1924	Sawyer, G. M.: J. Iowa M. Soc. **14**: 513 (Nov.) 1924	"All of hospital"	1
1924	Miller, H. E.: New Orleans M. & S. J. **76**: 495 (March) 1924	10	1
1925	Rowe, C. E., and Groom, W. C.: State Hosp. Quart. **10**: 257 (Feb.) 1925	56	1
1925	Caussade and others: Bull. et mém. Soc. méd. de hôp. de Paris **49**: 1042 (July 3) 1925	..	20%
1926	Patterson, H. A.: Damon, L. A., and Levi, P.: J. Nerv. & Ment. Dis. **63**: 446-455 (May) 1926	50	2
1927	Jackson, A. S.: J. A. M. A. **88**: 642 (Feb. 26) 1927	500	6
1927	Bollinger, H. J.: California & West. Med. **26**: 659 (May) 1927	200	2
1927	Fox, J. T.: Lancet, **2**: 389 (Sept. 17) 1927	167	2
1927	Thompson, W. R.: Personal communication to the author	130	0
1928	Shaw, A. L.: Personal communication to the author*	427	43
1928	Menninger, W. C.: Cases reported in present paper	400	3

* Dr. Shaw included in this series all cases showing even transient urticaria and itching.



Appearance of patient 2 three days after eruption.

FREQUENCY

It is not possible to state the frequency with which a skin eruption occurs resulting from phenobarbital, although table 1 gives the number of cases the various observers have noted. The frequency depends somewhat on the size of the dosage used, and many of the earlier reports record larger doses. Since 1920, smaller amounts have been more uniformly used, and the percentage of cases showing skin eruptions is much more nearly constant. Published reports since that date place the relative frequency between 1 and 3 per cent of cases.

DOSAGE AND COURSE OF ERUPTION

As may be noted in table 2, which summarizes the clinical cases reported in the literature, the average daily dosage has varied from 0.03 to 0.8 Gm. The earlier usage of phenobarbital was in much larger doses than are now generally given. The usual dose now used is between 0.1 and 0.2 Gm. over a twenty-four hour period. Most of the more severe reactions that have been reported followed larger doses, although in the cases reported by Phillips and Bothe, in Jackson's first case, and in the third case in the present series, severe reactions developed with an average daily dosage of 0.1 Gm.

The amount of the drug taken before the appearance of the eruption is inconstant and has varied between 0.3 and 17.7 Gm. Along with the amount must be considered the period of time over which that amount of the drug was taken. This time period varies widely, the rash having appeared within twenty-four hours after the first dose in one of Fox's cases and having been delayed eighty-six days in the fourth case reported by Luce and Feigl, sixty days in one of Hoven's cases, forty-one days in Herrmann's case, and more than thirty days in several other cases. In the case reported by Zimmerman, in which 1.2 Gm. was taken in one day and the drug was not used further, the rash did not appear until eight days later.

From the data at hand, no relationship can be drawn between the amount of the drug and the weight of the patient. Luce and Feigl call special attention to the fact that one of their patients, a larger and older child,

developed a much more severe reaction with considerably less phenobarbital than a smaller, younger child.

In several cases reported, an attempt to renew the phenobarbital therapy produced a recurrence of the skin eruption, and in one of Bollinger's cases the eruption reappeared on three different attempts to resume its administration. However, Hueber and Curschmann both were able to renew the drug in smaller doses after subsidence of the eruption. Herrmann continued with the same dose without recurrence, and von Bernuth observed the fading of the rash in two cases without discontinuing the drug and in a third case increased the dose from 0.1 Gm. to 0.2 Gm. daily with a simultaneous disappearance of the rash. In my third case, there was a mild rash, and a temperature of 104, but it subsided without discontinuance of the drug, and reappeared ten days later. The drug was not discontinued until the rash was fading after its second appearance. Two weeks later the same dosage was again administered without recurrence of the rash.

TYPE OF ERUPTION

There are two general types of reactions: an apparent sensitization reaction characterized chiefly by urticarial wheals and itching, and a toxic reaction characterized by a measles or scarlatina-like maculopapular erythema.

The urticarial eruption usually appears within a relatively short time after the beginning of the administration of the drug. In some cases this has been extensive, although in the majority of cases it is slight and the associated pruritus is a much more prominent symptom. Dr. A. L. Shaw, in a personal communication, suggests that these transient reactions result from failure to use some alkali, such as citrocarbonate or sodium bicarbonate, administered with the phenobarbital. Dr. W. R. Thompson has always used phenobarbital sodium, the soluble sodium salt of phenobarbital, and over a period of five years in the treatment of about 130 institutional cases has never seen a single instance of any skin eruption. Bollinger classifies all the cases in which he has seen an eruption as "calcium deficient."

TABLE 2.—*Report of Cases of Phenobarbital Eruptions*

Reference	Age	Sex*	Diagnosis	Average Daily Dose, Gm.	Total Grams in Number of days	Systemic Symptoms	Type of Eruption	Course of Eruption
1. König, H.: Berl. klin. Wchnschr. **49**: 1883-1885 (Sept.) 1912	20	♀	Catatonia	....	1.85 in 6 days	Fever 103.6 F.; white blood count, 6,300	Generalized erythema with rise in temperature	Faded in 3 days; reappeared with readministration of drug
2. Hoven, H.: Bull. Soc. de med. ment. de Belg., no. 171, December, 1913	42	♀	Epilepsy	0.15	8.0 in 60 days	Fever; anorexia	"Diffuse erythema"; edema	Subsided in "few days"
3. Ibid.	18	♀	Epilepsy	0.15	.....	Mild reaction	"Diffuse erythema"....	Not mentioned
4. Ibid.	..	♂	Epilepsy	0.15	.....	None	Eczematous, limited to face	Not mentioned
5. Bleichert, E.: Ugesk. f. Læger **75**: 1149 (July 3) 1913	Three cases		Epilepsy	0.8 to 1.2	.....	All three cases very severe toxic reactions	Extensive, severe and generalized erythema	In one case, reappearance of rash at week interval without further phenobarbital
6. Curschmann, H.: Therap. Monatsh. **31**: 148-150, 1917	22	♀	Epilepsy	0.3	1.5 in 5 days	Swelling of face.....	Edema and itching with bright red generalized rash	Duration, 8 days; smaller dosage without recurrence, although reappeared with same dosage
7. Ibid.	20	♀	Epilepsy	0.1 to 0.15	0.7-0.90 in 7 days	None	Body rash and swelling of face	Remained absent with smaller doses
8. Ibid.	50	♂	Epilepsy	0.3	1.2 in 4	None	Generalized eruption..	Remained absent with smaller doses
9. Luce, H., and Feigl, J.: Therap. Monatsh. **32**: 236-239, 1918	Five cases, all children		Chorea	0.2	5.1 in 27 days	Fever, conjunctivitis, inflammation of mucous membranes	Measles-scarlet fever form rash, generalized over entire body	Duration from 4 to 7 days
10. Ibid.			.....	0.15	5.1 in 34 days			
11. Ibid.			.....	0.8	7.0 in 9 days			
12. Ibid.			.....	0.2	17.7 in 86 days	None		
13. Ibid.			.....	0.2	8.0 in 40 days			
14. Heuber, D.: München. med. Wchnschr. **66**: 1091, 1919	40	♂	Epilepsy	0.5	15 in 30 days	Malaise; anuria	Confluent papular erythema with hemorrhagic areas; marked edema	Chronic, infiltrated, desquamating eczema, covering whole body, palms and soles
15. Haug, W.: München. med. Wchnschr. **66**: 1494 (Dec. 26) 1919	?	♀	Epilepsy	0.3	8.48 in 28 days	High fever; hemorrhagic diarrhea; stupor	Scarlet-fever-like, covering entire body	Disappeared 2 days after stopping drug
16. Ibid.	?	♀	Epilepsy	0.3	3.3 in 11 days	High fever; mucous diarrhea; albuminuria; severe sensory disturbance	Scarlatiniform	Disappeared in "few days"
17. Zimmermann: Therap. Halbmonatsh. **34**: 79, 1920	?	♀	Not given	1.2	1.2 in 1 day	Speech, hearing and visual disturbances; nausea and headache	Appeared 8 days after taking drug, with none in that interval	Duration "several days"
18. Weber, H.: Therap. Halbmonatsh. **35**: 467-469, 1921	16	♂	Epilepsy	0.5	13.5 in 27 days	Fever; adenitis; mucous membrane involvement	Maculopapular, scarlet, urticaria	Faded and after 8 days phenobarbital in one half former dose given without rash recurring
19. Ibid.	14	♂	Epilepsy	0.25	5.2 in 21 days	Adenitis; stomatitis; fever; angina; enlarged spleen	Generalized scarlet-fever-like rash	Subsequent pigmentation; cleared slowly
20. Phillips, John: J. A. M. A. **78**: 1199-1201 (April 22) 1922	45	♀	Asthma	0.1	0.8 in 8 days	Conjunctivitis; adenitis; pharyngitis; vomiting; albuminuria; fever of 105.2 F	Papular, morbilliform, generalized, with intense itching	Began to fade on fourth day; desquamation on seventh day
21. Weber, H.: Klin. Wchnschr. **1**: 968-969 (May 13) 1922	?	?	Epilepsy	0.15	1.8 in 12 days	Conjunctivitis; pharyngitis; temperature, 100.7 F.; white blood count, 24,000; eosinophils, 12.5%	Generalized papulomacular, scarlatiniform	Cleared after 4 days
22. Herrmann, R.: Klin. Wchnschr. **2**: 212 (Jan. 29) 1923	21	♂	Epilepsy	0.2	8.2 in 41 days	None; white blood count, 8,000	Limited maculopapular eruption on arms and chest	Drug readministered later without recurrence

* In this column, ♂ indicates male; ♀, female.

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TABLE 2.—*Report of Cases of Phenobarbital Eruptions—Continued*

Reference	Age	Sex*	Diagnosis	Average Daily Dose, Gm.	Total Grams in Number of days	Symptoms	Type of Eruption	Course of Eruption
23. Von Bernuth, F.: Klin. Wchnschr. **2**: 1158-1160 (June 18) 1923	?	?	Chorea	0.15	8.4 in 57 days	None; no fever.....	Measles-like urticaria with itching	Disappeared in 3 or 4 days without stopping drug; no recurrence
24. Ibid.	?	?	Chorea	0.10	?	None	Same as last.....	Same as last
25. Ibid.	?	?	Chorea	0.125	1.25 in 10 days	None	Same as case 23.....	Drug increased in amount with simultaneous disappearance of eruption
26. Bothe, W.: Klin. Wchnschr. **3**: 1678-1679 (Sept. 9) 1924	11	♂	Epilepsy	0.10	2.1 in 21 days	High fever; edema; mucous membranes involved; high leukocyte count; 25 per cent eosinophils	Universal, morbilliform with edema; subsequent pigmentation	Temperature elevated 9 weeks; total loss of hair and nails, and a general desquamation
27. Caussade, G.; Tardieu, A., and Lacapère, J.: Bull. et mém. Soc. méd. de hôp. de Paris **49**: 1042 (July 3) 1925	29	?	.....	0.10	1.1 in 11 days	None	Measles-like; itching..	Not mentioned
28. Weber, F. P.: Brit. J. Child. Dis. **22**: 280-285 (Oct.-Dec.) 1925	13	♀	Chorea	0.10	1.4 in 14 days	Slight, if any.....	Generalized erythema, developing bullous formation with jaundice	Duration about 10 days; followed by desquamation
29. Caussade, G.; Tardieu, A., and Lejard, C.: Bull. et mém. Soc. méd. de hôp. de Paris **49**: 1483 (Nov. 27) 1925	43	♀	.....	0.2	2.8 in 14 days	Chills, fever, headache; pharyngitis; adenitis	Measles-like	Not mentioned
30. Hamilton, E. S.: Geiger, C. W., and Roth, J. H.: Illinois M. J. **49**: 344 (April) 1926	36	♀	Epilepsy	0.36	6.84 in 19 days	Conjunctivitis; fever, 100 F.; pharyngitis; malaise; edema; white blood count, 8,600	Generalized erythema with itching; later developed vesicles	Conjunctivitis persisted 2 weeks; shed nails and part of hair; marked desquamation and subsequent pigmentation
31. Jackson, A. S.: J. A. M. A. **88**: 642-643 (Feb. 26) 1927	46	♂	Toxic adenoma	0.10	0.3 in 3 days	Fever, 101 F.; malaise; nausea and anorexia	Papular erythema becoming vesicular	Cleared in a week
32. Ibid.	46	♀	Toxic adenoma	0.10	.....	Fever, 100.8 F.; weakness	Maculopapular generalized erythema	Disappeared in 10 days
33. Ibid.	28	♀	Insomnia	0.10	0.6 in 7 days	None	Itching, papular, erythema	Not mentioned
34. Ibid.	38	♀	Toxic adenoma	0.1	0.26 in 4 days	None	"Typical"	"Prompt" clearing
35. Ibid.	22	♂	Exophthalmic goiter	0.10	0.45 in 5 days	None	Limited to forehead and chest	Disappeared in 3 days
36. Ibid.	55	♂	Syphilis	0.10	0.45 in 5 days	None	Generalized urticaria with marked itching	Disappeared in 2 days
37. Bollinger, H. J.: California & West. Med. **26**: 659 (May) 1927	5	♀	Chorea	0.03	0.09 in 3 days	Temperature, 100 F...	Maculopapular erythema	Eruption reappeared on three attempts to renew drug
38. Ibid.	53	♀	Insomnia	0.18	0.36 in 2 days	Temperature, 104 F.; headache; prostration; dizziness	Generalized confluent, measles-like erythema with marked itching	Desquamated in one week; recurred with dose of 0.1 Gm.; desquamation second time in 10 days
39. Haxthausen, H.: Dermat. Wchnschr. **84**: 827-829 (June 18) 1927	20	♂	Epilepsy	0.15	.....	Urine showed hematoporphyrin	Bullae, some hemorrhagic, limited to exposed surfaces with hyperpigmentation	Cleared "rapidly"
40. Fox, J. T.: Lancet **2**: 589 (Sept. 17) 1927	15	♀	Epilepsy	0.12	1.2 in 10 days	None	Papular erythema; "measles superimposed on scarlatina"	Disappeared in "few days"
41. Ibid.	12	♂	Epilepsy	0.12	0.12 in 1 day	None	Widespread erythema over limbs and body	Papules still visible from 2 to 3 weeks after appearance

* In this column, ♂ indicates male; ♀, female.

The toxic reaction begins usually on the chest and neck as a macular erythema, rapidly becoming papular. It spreads within a few hours to the rest of the trunk, the extremities and the head. In some cases it has appeared first on the forearms and arms and less often on the face. The macules are between 1 and 3 mm. in diameter and often seem to coalesce. The whole surface affected becomes a brilliant erythema and usually itches intensely. In several cases the eruption has progressed from the papular stage to the development of vesicles, and, in the case reported by F. Parkes Weber, to the formation of large bullae associated with jaundice. In the case reported by Heuber, hemorrhagic areas developed and in Haxthausen's case hemorrhagic bullae were present. Marked edema, particularly of the face, has been reported in several cases. Involvement of the conjunctiva and mucous membranes has occurred in practically all the more marked reactions.

The average duration of the eruption is from two to ten days, varying with different cases. Exceptions to this are reported by Bothe, whose patient maintained an elevated temperature for nine weeks. Heuber's case ran a prolonged course, and in one of Fox's cases the papules were still visible for two to three weeks. It usually disappears with a fine branlike desquamation. In Heuber's case there was an extensive chronic infiltration of the skin with eventual desquamation of all parts, including the palms and the soles. In the cases reported by Hamilton and his co-workers and by Bothe, both of which showed unusually severe reactions, there was a loss of hair and the finger and toe nails were shed.

Pigmentation of the skin subsequent to the rash, and lasting varying lengths of time, has been reported by H. Weber, Bothe and Hamilton. In case 2 of my series, a brownish pigmentation was very marked for three months and was still evident nearly a year after the acute rash. Haxthausen's patient gave the impression of being sunburned.

SYSTEMIC REACTION

A few cases of phenobarbital poisoning have been reported in the literature in which a skin eruption did not appear. Undoubtedly many of the systemic symptoms noted in the reports of cases showing a skin reaction do not bear any relation to the skin lesion. The more marked symptoms of poisoning, such as deep

stupor, mental disturbances, speech disorders, dilated pupils, paresthesias and amaurosis, as reported by various observers (Farnell,[1] 1913; Ungar,[2] 1914; Stein,[3] 1920; Nicolai,[4] 1923; Weig,[5] 1925; Carlill,[6] 1925) are rarely reported in the cases showing a toxic reaction. On the contrary, many of the toxic symptoms are not noted in the cases of poisoning.

Many of the cases, certainly the majority of the mild and limited skin eruptions, are not accompanied by any other systemic manifestations. Except for the itching and occasional swelling, the eruption appears, runs its course, and disappears without associated symptoms.

Fifty-one per cent of the cases (twenty-one) reported in the literature showed some elevation in temperature and in one of the three cases here reported a fever developed. In many cases the rise has been only 2 degrees, although in several there have been temperatures of 104 and 105 F. Second to the temperature elevation, gastro-intestinal disturbances have been most frequent, in the forms of diarrhea, vomiting, nausea and anorexia. Concomitantly, headache and dizziness are often present, and in the majority of the severe cases there is an associated stomatitis, pharyngitis and conjunctivitis. Adenitis has been present in several instances, and occasionally there has been a leukocytosis as high as 25,000. In Weber's case, reported in 1922, there were 12.5 per cent eosinophils, and in Bothe's most severe case the percentage of eosinophils was 25. Albuminuria is inconstant but in many cases is not mentioned. Haxthausen's case showed the unusual feature of hematoporphyrinuria.

PATHOGENESIS OF PHENOBARBITAL ERUPTION

Many suggestions have been made as to the nature of this reaction in the case of phenobarbital. It has been regarded by some as an anaphylactic reaction, an idiosyncrasy on the part of the patient, but in several cases it was readministered after the rash and in some cases continued through that period without further recurrence. It has been suggested that it is a mild poisoning, but on the other hand it neither mildly simulates the poison cases reported nor does it appear similar to the results of slight overdosage (dizziness, drowsiness, unsteadiness of gait). In view of the occasional occurrence of edema, its relation to a calcium metabolic disturbance has been suggested (Caussade et al.). Strauss believed that the exanthem was in some way associated with blood vessel, heart or other circulatory disturbances. Luce and Feigl did considerable chemical investigation in their cases and came to the conclusion that the cause is some individual factor in the patient's constitution.

It seems probable to me that the erythema represents a selective tissue action by the drug, and that each maculopapular spot represents a microscopic exudative inflammatory process with capillary thrombosis. Later the thickened epidermis forms the chaffy scales, probably in many respects identical with the process in scarlet fever. A similar erythema is rarely seen from digitalis, frequently from quinine, and occasionally from all of the barbituric acid series. It is known that in all these conditions, as well as in scarlet fever, there is a tendency to a rather high percentage of eosinophils.

1. Farnell, F. J.: Luminal; Its Toxic Effects, J. A. M. A. **61**: 192 (July 19) 1913.
2. Ungar, T.: Wien. klin. Wchnschr. **27**: 847, 1914.
3. Stein, T.: Therap. Hallmonatsh. **34**: 387, 1920.
4. Nicolai, H. W.: Ein Fall von Luminal Vergiftung, Klin. Wchnschr. **2**: 1891-1892 (Oct. 8) 1923.
5. Weig, F. L.: Phenobarbital Poisoning, Deutsche med. Wchnschr. **51**: 272 (Feb. 13) 1925; abstr., J. A. M. A. **84**: 1159 (April 11) 1925.
6. Carlill, H.: Poisoning with Luminal, Lancet **2**: 596 (Sept. 19) 1925.

SUMMARY

Phenobarbital may produce an urticarial reaction, or it may produce a scarlatina-like or morbilliform maculopapular erythema. In approximately 50 per cent of the reported cases of the latter condition there has been an associated pyrexia and other systemic toxic symptoms. In the face of the widespread usage of the drug, the number of cases showing such a toxic reaction must represent a very small percentage. A distinction should be made between the toxic reaction and the poison reaction. In the former, many of the cases do not show any particular relation to the dosage of the drug, and skin reactions have appeared frequently on small doses. It seems to me that the cause must be a selective tissue reaction to the drug, dependent on constitutional factors about which we are still ignorant.

A PRACTICAL WINDOW FOR TRANSMITTING ULTRAVIOLET RAYS

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The situation relative to windows transparent to ultraviolet rays is briefly as follows: As a result of the now well established fact that ultraviolet rays have a beneficial influence on health, glass manufacturers have been stimulated to produce sheets of window glass which will allow a considerable portion of the shortest (curative) waves reaching the earth from the sun to be transmitted. Unfortunately, the better of these glasses lose a large fraction of their transparency on prolonged exposure to ultraviolet rays. As a result, the entire situation is in a muddle. My purpose in this paper is not to present a glass which will retain its transparency for an indefinite period, but to describe a practical window which will be good for at least a year and which can be replaced at a cost of 25 cents. In other words, it is desired to direct attention to an efficient window which is within the means of the poor for, after all, they are the ones most in need of heliotherapy.

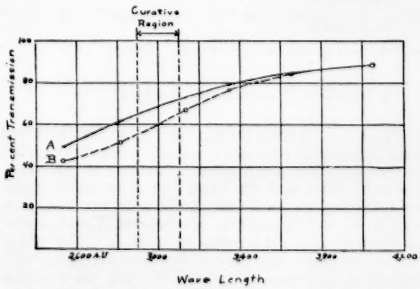

Fig. 1.—Degree of transparency of cellophane before and after exposure: *A*, fresh cellophane; *B*, after exposure for one year.

The transparent material chosen for the window is cellophane, whose optical properties I have already described.[1] A year ago, a window of the type to be described presently was mounted in place of the usual glass window on the south side of one of the laboratories and was exposed continuously to sunlight, wind and rain. Quite recently, i. e., after a year's exposure,

1. Pfund, A. H.: Bull. Johns Hopkins Hosp. **40**: 228 (April) 1927.

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the window was removed for testing. While the cellophane was somewhat brittle as a result of the washing out of the softening agent, the window was still intact and in useful condition. The results of tests for transparency before and after exposure are shown in figure 1.

From these curves it is evident that the transparency of the cellophane has dropped but slightly; i. e., from 70 to 60 per cent in the curative region near wavelength 3,000 angstrom units after being exposed to sunlight for a year.

Since single sheets of cellophane are only 0.05 mm. thick they will not withstand strong wind pressure

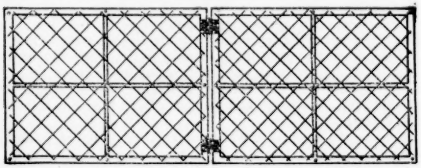

Fig. 2.—Wooden frame used for cellophane screens.

unless properly reinforced. The window design which has been found entirely satisfactory is shown in figure 2.

As is evident from figure 2, the light wooden frame consists of two identical portions, connected by hinges. Coarse chicken wire (from 1 to 2 inch mesh) is nailed to the inner sides of both frames; the large sheet of cellophane is laid on one frame and the other half is folded over, so that the cellophane is sandwiched closely between the two layers of chicken wire. Several screws serve to hold the halves of the frame together. Suitable hooks or other devices may be used to hold the frame in the window casing, the glass window having previously been moved out of the way. In view of the fact that the cellophane window is to be inserted only while the sun is shining there is every reason to believe that the period of usefulness of such a window will be greater than a year. Should the window by any chance become punctured or, after long service, display a faint yellowish tinge, it is a simple matter to insert a fresh sheet of cellophane.

At the present time cellophane windows are not on the market. It is believed, however, that they will fill a real want, and it is therefore suggested that charitable organizations, such as the visiting nurse associations and municipal departments of health, procure a supply of cellophane,[2] get in touch with a carpenter who will make the frames, and, finally, bring the matter to the attention of those who are in need of it.

Johns Hopkins University.

2. Cellophane may be procured from the DuPont Cellophane Company (Thirty-Second Street and Fourth Avenue, New York City), which has declared its desire to cooperate in this matter. Sheets of cellophane a yard wide and of almost any desired length (and of varying thicknesses) may be obtained at such a figure from the DuPont Cellophane Company that the cost of the sheeting becomes the smaller part in the fabrication of these screens.

How to Attain Culture.—Culture is obtainable everywhere, in galleries, museums and libraries by preference. Neither Benjamin Franklin nor Thomas Jefferson had been to college; William Osler and William James had not either; yet they were men of great culture. If colleges should teach students to think, college might be the best place to attain culture.—Collins, J.: *New England M. J.* **198**:189 (March 15) 1928.

REACTION OF GUINEA-PIGS TO MEXICAN TYPHUS (TABARDILLO)

PRELIMINARY NOTE ON BACTERIOLOGIC OBSERVATIONS

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The etiology of typhus is not yet definitely established in spite of the early work of Ricketts and Wilder and the later more exhaustive researches of Da Rocha Lima, Wolbach and Todd, Kuczynski, and Wolbach, Todd and Palfrey. Whereas the latter investigators definitely assert that *Rickettsia prowazeki* is the causative agent of typhus, others remain unconvinced. The difficulties in resolving the problem lie in the fact that *Rickettsia prowazeki* has refused so far to grow on artificial mediums. Moreover, the bodies found in smears from the stomach of infective lice and those found within endothelial cells in stained sections of tissues of typhus infected man and animal can be identified only with difficulty. Great conservatism should always be exercised in the interpretation of intracellular bodies within pathologic tissues. A comparison of micro-organisms stained in smear preparation with micro-organisms stained in sections of tissues must often lead to erroneous interpretation as to their identity on account of the different staining reactions of the organisms in smears and in stained sections. Shape and size are also influenced by the two methods. The demonstration of such small organisms as *Rickettsia prowazeki* within mammalian tissues will always remain haphazard, and their differentiation from similar cell inclusions of other nature is too frequently impossible, or at least inconvincing.

Male guinea-pigs inoculated with blood from patients with Mexican typhus almost invariably develop a scrotal swelling simulating in many respects the scrotal lesion observed in guinea-pigs inoculated with Rocky Mountain spotted fever. This symptom was described in 1917 by M. H. Neill but so far has never been confirmed by other investigators. The histologic examination of the animals inoculated with Mexican typhus reveals pronounced swelling and proliferation of the endothelial lining of the tunica vaginalis. As a rule this endothelial proliferation is so pronounced that the tunica is transformed into a thick, edematous, milky membrane, which can easily be scraped off. Smears made with the scrapings and stained with dilute Giemsa's solution invariably reveal swollen endothelial cells containing minute diplobacilli, frequently in such enormous numbers that the infected cells rupture. They are composed of two extremely small segments joined end to end in a straight line, rarely at an obtuse angle. They are generally separated by a barely perceptible unstained intermediate space or joined by a very pale blue staining intermediate part, whereas the two segments composing the pair stain reddish or purplish. These heavily infected endothelial cells exhibit a striking resemblance to the epithelial cells of the stomach of infected lice described and pictured by Da Rocha Lima. Such swollen cells frequently rupture while the smears are being made, and large numbers of these micro-organisms can then be studied easily and accurately outside the cells, and their morphology and behavior toward the different staining methods can be compared

with the bodies present in smear of lice. I shall describe them in more detail in a later paper.

The swollen proliferated tunica of these guinea-pigs is highly infectious, and a small drop of the edematous fluid collecting frequently within the tissues beneath the tunica invariably suffices to infect a guinea-pig, causing the typical febrile reaction of experimental typhus and the characteristic histologic lesions of that disease. It is remarkable that the endothelial lining of the tunica vaginalis reacts in the same manner to the presence of the virus of typhus as does the endothelial lining of the blood vessels. This peculiar localization of the virus of Mexican typhus offers unequaled opportunity for the study of the etiology of typhus, and the scrotal swelling is a precious and never misleading sign of the specific infection of the guinea-pig.

Clinical Notes, Suggestions and New Instruments

SEPTIC ARTHRITIS OF THE HIP IN A NEW-BORN INFANT FOLLOWING CIRCUMCISION

I. WILLIAM GASH, M.D., PHILADELPHIA

The performance of a circumcision is usually such a simple procedure, unaccompanied by any serious complications, that when complications do occur they are worthy of mention in the medical records. One would expect complications to occur, when they do, at the hands of the mohel, with his improper understanding and appreciation of asepsis, rather than when the operation is performed in a modern hospital under so-called aseptic surroundings.

The case here described has several interesting features, as the history will reveal.

REPORT OF CASE

History.—An infant, aged 3 weeks, admitted to the orthopedic service of the Mount Sinai Hospital, March 13, 1926, had had a normal delivery in every respect in the maternity ward of one of the local institutions. On the fifth day the resident physician performed the circumcision under aseptic conditions. On the eighth day the wound was found to be suppurating. Local applications were applied, and on the tenth day, mother and child were discharged from the hospital. The circumcised area was raw and inflamed; the temperature of the child was elevated; its pulse was rapid, and there was vomiting and the passage of frequent stools, watery in character.

The obstetrician in question referred the infant to a pediatrician for consultation, feeling certain that the symptoms previously mentioned were produced by some defect in feeding, although the child was breast fed. Treatment was instituted but without improvement in the condition.

When the baby was 2 weeks old, the mother observed that any movement of the left limb, voluntary or involuntary, caused the child to cry incessantly. Roentgen-ray examination of both hips revealed a slight cloudiness in the left, but otherwise, there were no pathologic changes indicative of bone or cartilage destruction.

The mother then consulted an orthopedist, who recognized the gravity of the condition and referred the child to the hospital.

Physical Examination.—The infant was fairly well preserved and apparently normal in all respects, except for the condition of its left lower extremity and the area of circumcision.

The right limb was extended, whereas the left was markedly flexed, with the thigh almost on the abdomen. The left buttock was full, and the gluteal folds were obliterated. The area was red, hot to the touch and extremely tender. Motion of the left thigh at the hip joint was restricted in all directions, notably in extension, abduction and adduction. A slight shortening of the left extremity was elicited.

The penis was inflamed, and the site of circumcision raw, incompletely healed and suppurating. The glands of the groin were prominent.

Laboratory Observations.—The temperature on admission was 101.3 F. The blood count showed: 85 per cent hemoglobin; 4,000,000 red blood cells; 35,600 white blood cells; polymorphonuclears, 80 per cent; small mononuclears, 15 per cent; large mononuclears, 3 per cent; eosinophils, 1 per cent, and transitionals, 1 per cent.

The blood Wassermann reaction was 3+; that of both parents was 4+.

The urine showed a faint trace of albumin, and an occasional white blood cell.

Roentgen-ray examination showed an outward luxation of the left femoral head. There were no evidences of osteitis or periosteitis.

Treatment.—An exploratory aspiration of the left hip joint was performed and a few cubic centimeters of pus was evacuated.

An incision was then made internal to the anterior superior iliac spine. A hemostat was inserted and an immense amount of pus gushed out. An opening was also made posteriorly in the buttock. A through and through rubber tube was inserted for drainage.

Copious dressings of warm boric acid were applied continuously.

Course.—The child had a rather stormy recovery marked by several complications. The temperature, at first elevated, later subsided to within normal range. Two weeks after the operation a slight induration of the left thigh was present, and a marked swelling of the scrotum, probably due to lymphatic blockage, was noted. The scrotum was elevated and hot applications were used in an attempt to reduce the swelling.

A week later, April 2, it was noted that the scrotal skin had sloughed away completely, exposing the tunica dartos.

Two days later induration of the left forearm was observed at the wrist and a splint was applied.

Under the care given, the scrotal skin soon showed evidences of repair, the left hip drained considerably less, but the infant became very emaciated and looked anemic.

On discharge, May 30, examination revealed that the left thigh was externally rotated, but there was no inequality in the length of the lower limbs. The involved buttock and thigh were indurated, the range of motion was restricted, and the glands in the groin were slightly enlarged. The left wrist was enlarged and the radius was thickened, but fluctuation was not present.

The roentgenogram showed a slight outward luxation of the left femoral head. The centers of ossification were not yet visible.

The diagnosis on discharge was:

1. Septic arthritis of the left hip, following circumcision.
2. Luxation of the left femoral head.
3. Metastatic epiphysitis of the left radius.
4. Gangrene of the tunica dartos.
5. Syphilis.

SUMMARY

This case was of great interest because of:

1. The rarity of serious complications following such a simple procedure as circumcision.
2. Its performance in a hospital under so-called aseptic conditions.
3. The ultimate recovery of the infant. A follow-up examination showed no further destruction in the hip joint, and complete recovery of the scrotum.
4. The confusion in diagnosis.
5. The failure to get a Wassermann report early.

OTHER CASES

It may be of interest at this time to note that I have been unable to find any similar case recorded, although there have been other complications following circumcision, notably:

1. A case of endocarditis, by Albert Czeoney.[1]
2. Several cases of syphilis, by H. Levien.[2]
3. Phenol (carbolic acid) poisoning, by A. Stern.[3]

1. Czeoney, Albert: Prag. med. Wchnschr., 1891.
2. Levien, H.: M. Rec. **47**: 124, 1895.
3. Stera, A.: M. Rec. **52**: 921, 1897.

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4. A case of tetanus, by A. Schirman.[4]
5. Ulcerated meatus, by Joseph Brennemann.[5]
6. Tuberculosis, of which forty-two cases have been recorded.[6]

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METHOD FOR THE DETECTION OF ACETONE *

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A simple and efficient method for the detection and rough estimation of acetone in urine and blood may be obtained by taking advantage of the considerable volatility of acetone at ordinary room temperatures. The volatilized acetone is detected by Scott-Wilson[1] reagent. This reagent is at present widely used in Folin's[2] quantitative method, and in others, such as Roth's[3] technic on expired air. These methods require the use of distillation or of aspiration, and are therefore not applicable to the rigid practical limitations of routine clinical laboratory procedure. The older Legal's test and other tests dependent on sodium nitroprusside in alkaline solution are somewhat cumbersome and are not entirely specific.

Scott-Wilson reagent is specific for acetone, is very sensitive, and is easily used in the test to be described. The method has been used on more than 15,000 specimens with satisfactory results, and has been repeatedly checked by Legal's qualitative test and by Folin's quantitative method.

PROCEDURE

The urine or blood is placed in a suitable container. The original container used in most hospitals for urine specimens is generally employed, no attempt being made to measure the volume. One drop of Scott-Wilson reagent is placed on a microscopic slide, which is then inverted to form a hanging drop. This is placed over the mouth of the container, care being taken that the reagent does not come in contact with the neck of the bottle, in order that precipitation may not occur through direct contact with the urine. Any time of exposure may be made, but an exposure of two minutes has been established, as this period has been found to give the best quantitative results. After the time period has elapsed the hanging drop is inspected for the macroscopic appearance of a fine white clouding or precipitate. If there is such a precipitate or clouding, the test is positive for acetone. If the reagent remains unchanged, acetone is negative.

It will usually be found sufficient to make the report on the designations given in the accompanying table, based on the exposure of one drop, or approximately 0.5 cc., of reagent for two minutes.

Degrees of Turbidity

Designation	Precipitate	Amount
Negative	Absent	None
Faint trace	Opalescence	0.005%
Trace	Faint turbidity	0.01%
Moderate trace	Turbid	0.025%
Heavy trace	More marked	0.05%
Moderate amount	Very marked	0.075%
Large amount	Precipitate	0.1%

These several degrees of turbidity are easily differentiated after a little experience with the test.

By setting up a series of tubes containing acetone in varying dilutions from 0.1 per cent down to 0.005 per cent and placing the reagent on slides, as indicated above, it will be possible to gain some idea of the quantitative possibilities.

A number of specimens may be run at the same time, thus saving considerable time.

Scott-Wilson reagent is prepared as follows (according to Folin): "Ten grams of mercuric cyanide is dissolved in 600 cc. of water. Add a cooled solution of 180 Gm. of sodium hydroxide in 600 cc. of water. Transfer this mixture to a heavy glass jar and add 2.9 Gm. of silver nitrate dissolved in 400 cc. of water. This must be added in a fine slow stream with vigorous stirring constantly. The silver dissolves completely, giving a clear solution. If it is turbid it may be set aside, and the clear supernatant fluid removed by a siphon after three or four days. This solution will keep for six months, after which a new solution must be made. Keep in a tightly stoppered dark bottle." The stopper of the container may conveniently carry a pipet graduated in twentieths of a cubic centimeter. A rubber bulb should not be used on the pipet.

An application of considerable value has also been found in the detection of acetone in the expired air of patients in coma, principally diabetic coma. It has, therefore, a very practical value in the differential diagnosis of the unconscious state, a part of the work at present under consideration, and which will be reported later.

In testing the expired air for acetone, a watch glass or a glass slide is moistened with Scott-Wilson reagent. This is held close to the patient's mouth and nose for two or more minutes. The reaction is definite in the presence of acetone, and is shown by the clouding of the reagent as described. Attention is called to the simplicity of the procedure and to the specificity of the reagent.

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5. Brennemann, Joseph: Ulcerated Meatus in Circumcised Child, Am. J. Dis. Child. **21**: 38 (Jan.) 1921.
6. Mark S. Reuben (Arch. Pediat. **34** 186 [March] 1917); L. Emmet Holt, Willy Meyer, 1887, Walt and Sara Welt Kakels.

* From the Pathological Laboratories, University of Pittsburgh.

1. Scott-Wilson, H.: J. Physiol. **42**: 444, 1911.
2. Folin, Otto: Laboratory Manual of Biological Chemistry, New York, D. Appleton & Co., 1923, pp. 189-201.
3. Roth, P.: J. Lab. & Clin. Med. **11**: 275 (Dec.) 1925.

Special Article

OBVIOUS AND OBSCURE INFECTIONS OF CENTRAL NERVOUS SYSTEM *

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The first quarter of the twentieth century will long be remembered because of the occurrence of three severe epidemic diseases of the central nervous system.

The first of the three, epidemic cerebrospinal meningitis, had long prevailed in Europe and America in endemic and sporadic form, and at least one considerable epidemic forerunner had occurred in the valley of the Vistula in 1864-1865. In spite of the increasing endemicity in the intervening years, it was not until 1904-1905 that a large epidemic wave broke over Europe and America. This wave appears to have arisen almost simultaneously in the Oppeln district in Prussian Silesia and certain Atlantic Coast cities in the United States. It formed the beginning of successive waves of the disease which eventually spread over the entire habitable globe, thus constituting the pandemic of meningitis of the twentieth century. Today the pandemic seems to have worn itself out; since 1920, the incidence of meningitis has been rather of the endemic than the epidemic kind.

It is noteworthy that this unequaled pandemic should have had its beginnings in the mining districts of Silesia and the Atlantic Coast states of this country. We can only speculate on the probable connection between the two outbreaks, but it is quite within the realm of possibility that emigrants from Germany coming into the United States through the Atlantic gateway brought with them the epidemic disease. Emigration from Germany more than doubled and from Austria increased several fold between 1900 and 1905, the greater numbers coming from the eastern provinces where the meningitis reached its highest level.

* From the Laboratories of the Rockefeller Institute for Medical Research.

* The George M. Kober lecture, given, March 27, 1928, at Georgetown University, Washington, D. C.

At first sight, the epidemic wave of 1904-1905 in America seems to have arisen earlier and to have been greater than that reported from Germany. Thus, New York State alone recorded 2,500 cases, while the total given for the Oppeln district is 3,000. However, when population totals are compared, the incidence is higher, perhaps much higher in Germany, in view of the fact that the population of New York State approximated 10,000,000, of German Silesia, 5,000,000, and of the Oppeln district alone, less than 2,000,000.[1]

While the epidemic outbreaks of meningitis were still going on, the pandemic of poliomyelitis or infantile paralysis, the second of the three epidemics mentioned, arose in 1906-1907. We are on surer ground in tracing this pandemic to northwestern Europe, where—in Sweden and Norway especially—poliomyelitis had been prevailing endemically, ever on a larger scale, for a number of years. Once the extension of the disease to other parts of Europe began in 1906, the American outbreak followed swiftly. The indications are that poliomyelitis, like cerebrospinal meningitis, is a man-borne disease; hence the human agents who convey it do so along the usual trade or travel routes. The active emigration going on from Sweden and Norway afforded a ready means of bringing the now actively spreading disease to the shores of America; and it is instructive to recall that the first two epidemic outbreaks in the United States occurred on the eastern coast and in Minnesota and adjoining states, the western homeland of the Scandinavian emigrants.

The universal epidemics of poliomyelitis have not yet run their course. With many fluctuations, the disease has continued to ravish the United States and Europe in the late summer and autumn. During 1927, considerable outbreaks occurred in German Saxony and in Roumania, and in California, Masschusetts, and even New York State. On the whole, the United States has suffered disproportionately, not only from poliomyelitis but also from meningitis. In 1916 an unprecedented outburst of poliomyelitis swept over New York State especially, in which more than 20,000 cases were reported, and it is believed that many more cases, paralytic and nonparalytic, actually occurred. Between 1916 and 1926, the extent and intensity of the successive outbreaks moderated, but the hopes thus raised of cessation soon to follow were shattered in 1927. We look forward, therefore, to the immediate future with apprehension rather than with assurance.

The pandemic of poliomyelitis through which the world is passing has now endured fully twenty years. The period is a long one, and the successive waves have been not only irregular but in many ways bewildering. It is part of the task of epidemiology to account for the remarkable occurrences observed, a task which may be lightened by the experimental investigations now under way with epidemic diseases of the lower animals. There is belief that populations once widely and severely exposed to certain epidemics pass through a kind of mass immunization, in the course of which many slight or subclinical cases difficult or impossible of accurate detection arise. This is what is supposed to have happened with meningitis, and is happening with poliomyelitis. There seems no doubt that nonparalytic, so-called abortive instances of poliomyelitis, accompany the frankly paralytic cases. Whether or not this is the protective process at work and that through which the epidemics will finally be suppressed, only future events can actually tell.

The third disease of the central nervous system which has reached pandemic proportions in the present century is epidemic or lethargic encephalitis. Its first appearances have been traced to two relatively small outbreaks during the World War, at Bar le Duc in France in 1916, and in Vienna in 1917. The cases of the disease were recognized in both instances as being exceptional, and von Economo, who made the more precise studies, proposed for them the term lethargic encephalitis, in order to describe the striking sleepiness often attending the malady. In the meantime, many different clinical manifestations have been observed, so that this descriptive term has become too narrow and has now been replaced by the broader designation of epidemic encephalitis.

Just as chronologically epidemic poliomyelitis overlapped epidemic meningitis, so epidemic encephalitis has overlapped epidemic poliomyelitis. The extension of the encephalitis from France and Austria to other European countries was rapid; by 1918, much of Europe was already invaded, and early in 1919 cases were arising in the United States. Within the next year the disease had become pandemic, and at the present time it is established widely throughout the world—whether permanently or not, no one can say.

Both epidemic meningitis and epidemic poliomyelitis have a long history, and under one designation or another can be traced to remote times. Not so, however, with epidemic encephalitis. Its defined history is very recent. If it prevailed before in epidemic form, it was so confused with other maladies that no one has with certainty succeeded in extricating it. That such confusion actually did occur seems unlikely, because not only are the clinical manifestations very impressive but the after-effects or sequences are so severe and serious that it is difficult to see how they could have been overlooked and escaped incorporation into descriptive medical history. At the present time, another or opposite tendency is being displayed. Instances of brain inflammation, or encephalitis, are being described as complicating a whole host of infectious diseases, of childhood especially, and are being either confused with or somehow related to epidemic encephalitis. Thus the brain complications of measles, scarlet fever, mumps, whooping cough, influenza, and chiefly those arising during vaccination, have been so viewed. Fortunately, accurate clinical as well as pathologic studies of the conditions promise to bring order into what otherwise may become disturbing and misleading clinical observations.

We have now learned that three distinct epidemics, doubtless infectious diseases, of the central nervous system have prevailed throughout the twentieth century. The first of these diseases attacks especially the membranes surrounding the brain and spinal cord, whence the name meningitis; the second attacks especially the gray matter of the spinal cord and brain stem, whence the designation poliomyelitis; the third attacks especially the brain proper in all its parts, whence its multiform clinical character and the name encephalitis. It is now

1. Bruce Low in his statistical review records 3,317 reported cases for Prussian Silesia in 1905 and 266 cases for all Germany in 1904. Western Galicia bordering on Austrian and Prussian Silesia reported a severe epidemic in the early part of 1905. The New York State records show a sharp increase in 1904, when 1,708 cases, and in 1905, when 2,566 cases were recorded. Although still numerous, the cases had diminished in 1906, and they had fallen still further in 1907 in Germany and New York State. It is noteworthy that the fall in New York State was far greater than in Prussian Silesia. It is very probable that until the severe outbreak in 1905, the reporting everywhere was faulty and incomplete, and a sharp distinction between epidemic and other forms of meningitis was not always made. Germany outside of Prussian Silesia suffered astonishingly little from epidemic meningitis between 1904 and 1910.

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my purpose to examine each of these diseases separately, in order to reveal the state of our knowledge of their essential nature, based on the manner of their causation.

Before proceeding to deal separately from this point of view with these three epidemic diseases, I shall devote a few words to a fourth epidemic disease of the twentieth century, which in point of prevalence and destructiveness far outran the other three combined. I refer to the epidemic, better termed pandemic, of influenza of 1917-1918 to 1922-1923. The question which is of paramount interest to us is whether influenza is accountable in any way for the other epidemic diseases. We may quickly dismiss meningitis and poliomyelitis from such a connection: in point of time, these two diseases prevailed as epidemics many years before the influenza epidemic arose. Moreover, their previously recorded history separates them from the well recorded accounts of many earlier epidemics of influenza.

Epidemic encephalitis is in this respect in a far more uncertain position. Let it be recalled that the first cases of the disease were observed in Europe in 1916 and 1917. Now, the epidemic of influenza which reached a peak in 1918-1919 was already on the march in Europe as early as 1917, and probably earlier. An overlapping in time is therefore apparent. Could epidemic encephalitis be merely one manifestation, albeit a severe one, of epidemic influenza? That it is such a manifestation merely has been repeatedly asserted. The relationship has been as assiduously denied as upheld. What, then, are the evidences for epidemic encephalitis being a disease distinct from influenza, or, as we say, a disease by itself?

An argument could be based on the circumstance that while the two diseases overlapped in time, as in 1918-1919, once the pandemic of influenza had passed, that of epidemic encephalitis still continued. The height of the epidemic wave of epidemic encephalitis came several years after that of the influenza wave, as in England, for example, in 1924-1925. The moment has not yet arrived at which to determine finally the etiologic relationship, if any, existing between influenza and encephalitis, and can scarcely come until our knowledge of their immediate sources or microbic incitants becomes definite.

Although we are denied the answer we seek by direct inquiry, we are offered it through a somewhat devious path. The pandemic of influenza of 1889-1892, the one immediately preceding that of 1918-1922, was to all intents and purposes as well studied clinically, pathologically and bacteriologically as could be done now. In view of the state of development of scientific medicine in 1890, it is not to be doubted that, if large numbers of clinical cases corresponding to those we now call epidemic encephalitis had arisen, they would have been recognized and described. Their occurrence is indeed conspicuous through absence, although other, usually less severe and impressive instances of nervous complications of epidemic influenza are frequently described as constituting part of the influenzal disease of the nineties. We are therefore left in the position of dealing with epidemic encephalitis as a disease having its own particular origin or etiology, and as such it will be dealt with in a later part of this address.

EPIDEMIC MENINGITIS

Let us return now to epidemic meningitis, in order that we may consider the specific theme of the lecture, relating as it does to the evidences of infection as the sources of epidemic diseases of the nervous system. We are all aware of the significance of the term infection. By it we mean to describe a pathologic state in which an injurious agent, usually a microscopic organism is present at the site of disease, doing harm to and exciting a response or reaction from the tissues attacked. In exceptional instances, of which tetanus and diphtheria are examples, the micro-organisms multiply at one part of the host, and produce poisonous chemicals which enter the blood and act injuriously on organs at a distance.

Epidemic meningitis is an example of the direct and obvious effect of a micro-organism, the meningococcus, on the membranes about the brain and spinal cord, and even on the nervous organs themselves. This micro-organism, which we first came to know in 1887, often takes a position within the leukocytes called out by the inflammation as part of the host reaction to the infection. I will avoid all mention of the long controversy dealing with the question whether this intracellular diplococcus is after all a specific microbe or merely one of the class of pneumococci. The dispute has long been settled in favor of its specificity. But the conflict of opinion, as so often happens in science, brought a rich reward of knowledge, so that at the present time we are in possession of many important facts bearing not only on the meningococcus but incidentally on meningitis itself. That meningitis is a man-borne infection, because the meningococcus may live on the nasal mucous membrane, is now established; that meningococci are not all precisely the same in biologic characters is also established. This lack of uniformity may appear relatively unimportant, when it is merely a question as to whether the nutritive habits are always the same, but it becomes vitally important when it relates to intimate chemical differences on which certain immunity reactions of the body depend. It was just this knowledge of immunologic distinction that has made it possible to produce an effective serum, the antimeningococcus serum, the employment of which in a proper manner has affected so profoundly and beneficially the course of epidemic meningitis itself. Let it be recalled that in the days preceding precise knowledge of the meningococcus and its varieties and the preparation of an antiserum, the mortality from epidemic meningitis fluctuated between 65 and 90 per cent, with which should be contrasted the present mortality of 25 per cent or even less. It is also well to be reminded that in infants of 1 year—and epidemic meningitis is predominatingly a disease of childhood—the mortality was 100 per cent, while now it is 50 per cent or less. In addition, it may now be stated that those who recover, with very few exceptions, become completely restored to health, without suffering any residue of mental or muscular impairment whatever.

Epidemic meningitis is an obvious infection, but in order to understand the infection and to use that understanding to combat the disease, attention must be given to the physiologic conditions which determine the accessibility of the meninges, the membranes of the brain, both to meningococci and to other things. The fluid within the meninges has very direct access to the sensitive structures of the nervous organs. Hence this fluid is protected by adequate anatomic safeguards from receiving injurious substances. The meningococci enter this fluid, if from the blood, only after injuring the choroid plexus gateway; it is not yet certain whether the entrance may not be also along the direct lymphatic vessels uniting the nasal mucous membrane with the

cerebral meninges. It is known that fluids cannot be passed from the blood into even the inflamed meninges, in which permeability is increased, in sufficient quantity or concentration to affect the multiplying meningococci there present, while they can be introduced directly by the device which is known as lumbar puncture; and by employing the latter route, the serum treatment, otherwise doomed to failure, became a life-saving measure of therapeutics.

POLIOMYELITIS

In epidemic meningitis we deal with an obvious infection of the central nervous system, in which the meningococci can be rendered visible, cultivated outside the body, and employed for inoculating animals, in which an experimental disease is produced, subject to all the conditions of study necessary to a wider and more complete knowledge of the disease in human beings, and of its control. When we pass to the second epidemic disease of our list, namely, poliomyelitis, we meet with circumstances far less favorable to study than in meningitis. It was not until 1907 that the final proof of the infectious nature of poliomyelitis was brought. It is true that Caverly, who studied the Vermont epidemic in 1894, believed the disease to be infectious, and Medin and Wickman later also became convinced on epidemiologic evidence; but it was the transmission of the human disease to the monkey, made by Landsteiner in 1907, which confirmed these beliefs and opened the disease to that intensive study which has placed it so high among the communicable diseases, the pathology of which is being explained.

There is no doubt that the success attending the experimental investigation of epidemic meningitis influenced strongly the investigation of poliomyelitis. It became evident very early that an obvious micro-organism, such as is readily detected in meningitis, does not occur in poliomyelitis. The most refined microscopic technic fails to reveal regularly any definite micro-organism in the nervous tissues, and even in cultures treated in the most painstaking manner. I am making this categorical statement because I shall myself take exception to it a little further on. The reason for this course will become apparent. Notwithstanding these facts, something is known by inference and experiment regarding the agent responsible for infection in poliomyelitis.

Bacteriology, when obstructed in its orderly development, like other sciences has to proceed along by-paths. This has happened in poliomyelitis, as in other diseases of animals and man. It is not sufficient merely to fail to discover visible micro-organisms; it may well be that the limit of size of matter which we call living is below the magnitude of visibility, even when the utmost powers of the microscope are brought into action. The existence of living, nonvisible organisms was rendered probable by the early study of certain animal diseases for which it could be shown that fluids taken from the sick animals, when passed through earthen filters which hold back all visible cells, are still capable of producing disease. We now describe three or more score of so-called filter-passing viruses, each one capable of inducing disease in plants, the lower animals, and man. The agent producing experimental poliomyelitis belongs to this filter-passing class.

Besides man, only the monkey, as far as discovered, is subject to infection with this filter-passing virus. We infer its activity in man; we demonstrate it in the monkey. The virus, once it is adapted to the monkey, is incredibly active. It may be passed by inoculation from animal to animal indefinitely. We possess at the Rockefeller Institute a virus which has been passed for twenty years and its activity is still unimpaired. Moreover, the disease experimentally produced in monkeys is a precise replica of the disease as it occurs in man. The pathologic changes are also identical in man and the monkey. All this provides an extremely satisfactory set of conditions for the experimental investigation of poliomyelitis, through which the clinical disease in man may become illuminated.

Until the mode of infection of a microbic disease is determined, methods of prevention are merely haphazard. Up to 1907, all was conjecture and speculation as to the manner in which poliomyelitis arises. With the accomplishment of the reproduction of the disease in animals, a way was opened to secure this essential knowledge. Lewis and I had shown that the virus of poliomyelitis could be propagated regularly in the brain of monkeys. A small trephine opening is made in the skull of an anesthetized animal, and a minute quantity of the sterile brain tissue of a previously infected monkey is injected, after which the opening is hermetically sealed. The virus has now been deposited and imprisoned in an interior organ having no natural outlet to the surface. And yet it could be predicted that the virus would seek and find a way of escape, for in order that an infectious disease may be maintained in nature, the micro-organism inciting it must find a way out of the body, just as of course it has a determined way into the body; otherwise the succession of essential events in the life cycle would fail, and the germ as well as the disease come to an end. It was our belief that if only we could detect the manner of egress of the virus, we should have secured indication of the mode of its ingress as well.

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The expectation was justified by the result. The filter-passing nature of the virus enabled us to test secretions and tissues naturally carrying many bacteria which could not safely be brought into the brain. The data secured proved that the virus escapes exclusively by way of the secretions of the nasopharyngeal mucous membrane. This is, after all, not remarkable, in view of the intimate lymphatic connections existing between the cerebral meninges and the nasal membrane. The immediate question now was this: Can the virus ascend to the brain and induce poliomyelitis when brought into close relation with the nasal mucous membrane? Experiment proved that, next to direct brain inoculation, this channel is the most certain to lead to disease. The mode of infection seemed now exposed. It remained merely to secure the virus in the mucous membranes and their secretions in human beings, either exposed to or suffering from the disease, which in due time was undertaken and accomplished.

We now believe that poliomyelitis is one of that class of communicable diseases in which the infectious microbe passes from person to person by way of the secretions of the nose and throat, and that in susceptible individuals, of whom fortunately the proportion in the population is not large, the passage continues from the nasal mucous membrane to the organs of the central nervous system, in which multiplication occurs, and from which infection and disease result.

And yet, poliomyelitis is not by ordinary tests an obvious infection of the nervous system. The virus of which I speak has not been certainly seen, has only a few times, if ever, been enriched by cultivation outside the body, and has not yielded unmistakably to

study the many characteristic qualities which we so readily obtain and so insistently demand in studying the usual pathogenic or disease-producing bacteria. We know this virus by its inoculation effects on monkeys, and by inference we know its natural effects on man; and the knowledge which has been secured about it during the past twenty years since its first detection is admittedly considerable. There are those who hold that this virus is not the somewhat elusive body which I have described, but is merely a specialized streptococcus which has the power to play, as it were, hide and seek in the body. Using a devious method of study, Rosenow has obtained experimental results which have led him to this conclusion. There are few upholders of the contention among bacteriologists, but—as is not surprising—many more among a less expert and critical medical class. The regrettable result of this, as I believe mistaken, point of view of the etiology of poliomyelitis arises from the fact that it has led to the employment of an antistreptococcus serum for the treatment of cases of poliomyelitis.

Since this is a matter of large practical import, I should like to deal with it at somewhat greater length. Let me recall that the virus diseases of man and animals have this property in common: recovery from them is generally attended by immunity to subsequent attack, whether through fresh exposure to or inoculation with the virus of the disease. This immunity is associated with the occurrence of virucidal substances in the blood of the recovered animals, so that under suitable conditions this blood, or its separated so-called convalescent serum, exerts a destructive effect against the inoculated virus. This general fact was shown by Lewis and myself to apply to the virus disease epidemic poliomyelitis: the convalescent serum derived from man or the monkey, when admixed with the virus and injected together into monkeys, does not lead to the experimental disease.

One can go even further than this. It was likewise found by us that the convalescent serum is capable even of preventing experimental poliomyelitis when introduced into the monkey in which the virus had previously been injected into the brain. That is, the serum is not merely virucidal outside the body (or in vitro), but inside the body (or in vivo) as well. However, in order to exert this virucidal effect in the body, the serum must be brought into immediate relation with the seat of inoculation (equivalent to the seat of the disease). We learned in treating epidemic meningitis with a serum that there is one way only of bringing the curative serum and the site of the infection together, and that way is by direct introduction through lumbar puncture. We confirmed this observation in poliomyelitis, and hence accomplished the arrest of the action of the virus on the spinal cord and brain only when the convalescent serum was introduced into the cerebrospinal fluid in this manner. The fluid carries the serum to the substance of the brain and spinal cord, where it meets and suppresses the virus, an effect which cannot be accomplished by bringing the serum into the circulating blood.

If I have made this part of the subject clear, it follows that a way is known for testing the activity, that is, the virucidal effects, of a given therapeutic serum. We have paid particular attention to this matter. Experiments of this nature were carried out some years ago by Amoss and Eberson, and again recently by Stewart and myself with Rosenow's antistreptococcus serum, and, as I may state, with uniformly negative results. Rosenow's serum has not shown itself to be virucidal, either in vitro (the easier form of neutralization) or in vivo. Indeed, the injection of the mixture of virus and serum into the brain of monkeys rather accelerates than delays the onset of disease by diminishing the incubation period. According to these tests, the antistreptococcus serum is not a specific antiserum for poliomyelitis.

This would seem to be the proper place to add a few words on the present evidences of the value of any serum treatment for poliomyelitis. The reports available on this subject are either unconvincing or misleading to the practicing physician. The difficulty is a statistical one, as is so often encountered in the medical literature. It is emphasized in poliomyelitis because the clinical definition of the disease in the absence of precise signs of paralysis is far from sharp, and because there are as yet no means known which will tell the physician whether a patient in one of the preparalytic stages of the disease will or will not develop paralysis—whether a beginning paralysis will or will not be arrested or increase in intensity. So many undeterminable factors attend the disease, beginning with diagnosis and ending in prognosis, that the effect of a given therapeutic measure can be ascertained only with doubt in the present imperfect state of our knowledge of this extremely variable disease.

For this reason, it is safer and more rational to rest a decision on the animal or experimental disease, which so exactly reproduces the human malady, and tends rather to be more than less severe in its clinical manifestations. If this is true, then evidence in favor of the effective action of convalescent serum can be obtained, and, conversely, evidence opposed to any action of an antistreptococcus serum. I believe it is possible to go even further than this and to say that all serums prepared in animals (horse, sheep), not themselves subject to experimental poliomyelitis, by injecting nervous tissues taken from infected monkeys, are also ineffective. Convalescent serums alone are demonstrably effective. So far as human cases of poliomyelitis are concerned, the convalescent human serum alone, used early, offers any promise of specific therapeutic action. The virucidal effect endures in the blood many years after recovery from the acute attack of poliomyelitis. It has been detected twenty or more years after the attack. I note that in California, Massachusetts, and New York State official or private agencies have undertaken to make the convalescent serum available in the event of epidemic outbreaks of poliomyelitis.

I have pointed out that poliomyelitis must still be ranked with the obscure infections of the nervous system. The reason for this is that we are still much in the dark as to the essential nature of the filter-passing viruses. The evidence is strong for placing them among living organisms, in spite of their submicroscopic size. That an increase takes place in the body, if not in cultures, is quite certain, in view of the indefinite communicability of the diseases they occasion. That they are antigenic is shown by the fact that virucidal antibodies so commonly arise in infected animals. No lack of effort has been made to render them visible in cultures and in tissues. Noguchi and I long studied poliomyelitis by culture methods, and at length did secure minute visible bodies which, for lack of a better name, we called "globoid bodies." We did not feel that the evidence was complete, uniting these bodies etiologically with poliomyelitis. And yet several cul-

tures proved pathogenic, among which was one culture kept at +4 and 37 C. for more than a year. Moreover, Amoss succeeded in demonstrating similar globoid bodies in the brain tissue of virus-infected monkeys. To secure the cultures or to render the bodies visible in the tissues has proved an herculean task, demanding the most skilful and patient powers of the bacteriologist. Nevertheless, the "bodies" have come to play a part in the elusive etiology of poliomyelitis, in part because Rosenow identifies the streptococcus already mentioned with them, regarding the "bodies" as merely a stage in the developmental history of the streptococcal organism. Many facts make this connection improbable, and among them are the strictly anaerobic nature of the bodies and the extraordinary difficulty of their cultivation. Recent studies by Olitsky have made this hypothetic connection still more dubious.

EPIDEMIC ENCEPHALITIS

We turn now to the third epidemic nervous disease of the twentieth century, namely, epidemic or lethargic encephalitis. In spite of many intensive studies, it remains the most obscure of all. As already stated, we trace with confidence both epidemic meningitis and epidemic poliomyelitis into antiquity; the earlier history of epidemic encephalitis remains a mystery, and attempts to identify it with remote accounts of so-called sleepy sickness have not been successful. Its relationship to pandemic influenza is mere conjecture, and this at one time tenuous connection has lost rather than gained in probability, as epidemic influenza has receded farther and farther into the past, and epidemic encephalitis has continued to prevail. Whether its present semiquiescent condition indicates establishment in endemic form, ultimate disappearance, or precedence to another epidemic wave, future events will have to show. A disease without a history is like a country in a state of revolution; forthcoming events are known by their occurrence rather than revealed by prophecy.

Epidemic encephalitis is clinically a much more complex disease than either meningitis or poliomyelitis. The reason for this difference is found in the many functions of the brain. Inflammation of different parts of the brain brings in its train more complex clinical responses than does inflammation of the spinal cord or of the meninges. The change of designation from lethargic to epidemic encephalitis partly covers this feature of the disease; many cases of the malady show excitement and muscular overactivity, rather than lethargy and coma. The pathologic changes on which the varied symptoms depend are not complex. Cellular infiltrations in tissue and about blood vessels, degeneration of ganglion and supporting cells, and proliferation of glia, are the main incidents. In view of the frequency with which parkinsonian symptoms arise in the course of the disease, the common extensive involvement of the substantia nigra becomes significant. In spite of the distressing crippling effects of poliomyelitis, epidemic encephalitis is the more sinister disease. When it does not actually destroy, it blasts the future of many of its victims by producing early Parkinson's disease, impairing mental power and perverting the moral character.

The causation or etiology of epidemic encephalitis is wholly obscure. That the disease is infectious in nature may be surmised from its epidemic character as well as its pathologic foundation. The experimental studies made for the purpose of discovering the source have been legion. It is true that there is a school, albeit a small one, which holds that epidemic encephalitis is a virus disease, and indeed a particular manifestation of the action of the herpes virus on the nervous system in man.

The history of this view is instructive. We can follow it only in the briefest fashion. While experiments were being made to reproduce epidemic encephalitis in animals, inoculations in rabbits were also being carried out with the contents of simple herpes vesicles. Now, simple herpes (cold sores) is very common in human beings, in whom it is a minor ailment; herpes does not occur normally in rabbits, and yet when the vesicular contents are inoculated into rabbits in particular ways, the animals develop an encephalitis to which they usually succumb. If there is added to this remarkable occurrence the fact that, in a small number of instances, tissue taken from the brain and the cerebrospinal fluid in cases of epidemic encephalitis has produced a similar experimental encephalitis in rabbits, we have before us the essentials of the circumstantial evidence linking the herpes virus etiologically with epidemic encephalitis.

Unfortunately for the linkage, the failures to produce encephalitis in rabbits with materials taken from cases of epidemic encephalitis in man far outnumber the few successes achieved; besides which, it has been found possible to induce the experimental encephalitis with the cerebrospinal fluid taken from a nonencephalitic individual. Both in Europe and in America the weight of evidence is to the effect that the origin of epidemic encephalitis is still undiscovered and that experimental herpes encephalitis in the rabbit and other rodents is an independent, although in itself highly interesting, disease.

With the time at our disposal, we cannot follow this subject into all the devious by-paths where search for convincing evidence of the identity of the virus of herpes and that of encephalitis has been sought. A stumbling block is the common failure to detect the virus in the brain tissue and cerebrospinal fluid in human cases of epidemic encephalitis, where—were it really the provocative agent—it should be found. At one time the guinea-pig was supposed to solve the difficulties encountered. It was reasoned that the virus acts for a brief period only on the nervous structures, and then disappears. This view does not in fact fit in well with the progressive and relapsing features of epidemic encephalitis. However, a similar mode of action of the virus was described for the guinea-pig, and far reaching conclusions applicable to man were drawn from it. Unfortunately for the theory, we have shown that it is only weak strains of herpes virus that behave in this manner; strong strains do not produce encephalitis and vanish, but persist and multiply, and may be passed indefinitely in series from guinea-pig to guinea-pig.

It is improbable that simple herpes and epidemic encephalitis share a common etiology. The upholders of the unitarian view invoke, of course, other or contributing conditions to account for the extraordinary action of the herpes virus. They assume a special disposition of the nervous organs of a large group of persons at certain periods of the world's history, through which they are rendered subject to the malign influence of this ubiquitous and usually quite innocent virus. This last supposition is essential to the hypothesis, since we have no convincing knowledge of earlier epidemics of encephalitis, and hence appear to be dealing with a unique occurrence in nature.

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In times long past, Hippocrates wrote of seasonal constitutions as determining the nature of prevailing diseases, and some thousands of years later Sydenham elaborated the doctrine of epidemic constitution, in which peculiar influences emanating from earth and sky were said to unite to control certain kinds of epidemics. We have, indeed, in the name influenza a survival of the belief in such occult happenings. These mystical concepts have a strange sound in modern ears, as we seek in microbes and other materially demonstrable causes the patent sources of communicable diseases. And yet they are not wholly absent from the view just referred to, which would connect in a causal way herpes virus with epidemic encephalitis.

For my part, I think it better to rest temporarily in confessed darkness than to grope about in false light. So long as we feel that we do not know, we are urged to seek. The spirit of investigation which fosters scientific research is often quenched by a satisfying, even if not wholly convincing, explanation. It is safer to regard epidemic encephalitis as etiologically wholly obscure at the present time, and to leave to advancing bacteriology the task of rescuing it from this low position, which it surely will some day do.

Another misguided attitude toward the etiology of epidemic encephalitis, as I see it, is that adopted by Rosenow and one or two other bacteriologists, who ascribe the disease to certain kinds of streptococci. Rosenow has repeated for encephalitis a method of inoculation employed earlier for poliomyelitis. The inocula in the present instance were taken from abscessed teeth, tonsils, etc., and introduced *en masse* into the brain of rabbits. That infection and inflammation can thus be excited is not to be doubted. Rosenow states that a selection among the streptococci introduced is affected by the brain tissue, so that the specific microbe of epidemic encephalitis is thus secured. From the cultures so obtained, a serum is produced which is to be employed in the treatment of the epidemic disease in man. In my opinion, these studies have not been so conducted as to give a definite and unmistakable result.

The bacteriologic investigation of epidemic encephalitis and of the supposedly related herpetic encephalitis in rabbits has proved not free of still other pitfalls. As the means employed to cultivate bacteria become more complicated, the risk of contamination by extraneous bacteria increases proportionally. When a strict and precise technic is employed, even with very complex culture mediums, Olitsky and Long at the Rockefeller Institute have failed to cultivate streptococci and other bacteria from the brain of rabbits succumbing to herpetic encephalitis. Under some circumstances, streptococci and certain other micro-organisms do appear in the cultures, and they have been traced to air contamination or to preexistence in components of the culture medium. The medium employed by Evans and Freeman is admittedly difficult to sterilize, and an exposure to autoclave temperature of 120 C. for ninety minutes has failed sometimes to destroy bacteria within the solid particles it contains. When the streptococci are injected into the brains of rabbits, a purulent meningo-encephalitis, clinically and pathologically distinct from virus encephalitis, is induced. An indistinguishable effect is produced by the streptococci derived from the meat particles of the supposedly sterile culture medium. Moreover, the greatest disparity exists between the regularity with which encephalitis follows herpes virus inoculation and the irregularity with which the streptococci produce inoculation effects. Finally, cross immunity reactions, so impressive and constant in virus inoculation, are wanting between the virus and the cultivated streptococci. The conclusion which most accurately fits these observations would exclude streptococci as having any etiologic relationship to virus encephalitis in the rabbit, and suggest that when found in cultures they were originally present in the culture medium employed, or arose extraneously in the course of the bacteriologic manipulations employed.

There remains one more aspect of epidemic encephalitis to be discussed briefly. That an encephalitis attends epidemic influenza, endocarditis and some other diseases is well known. For the most part, these secondary inflammations can be distinguished from the lesions of epidemic encephalitis by the naked eye and the microscope. However, since 1924, more and more instances of encephalitis attending the commoner infections of childhood are being reported. Measles, scarlet fever, whooping cough and other common maladies have thus been implicated, but the largest number of reported cases have attended antismallpox vaccination. Now, the fact is well recognized that, when the mind is made alert to a new phenomenon, evidences of its occurrence become more frequent. Undoubtedly this is true of encephalitis, so that physicians, having become aware of clinical encephalitis, are more often on the lookout for the symptoms attending it.

The instance of postvaccinal encephalitis scarcely fits into this category. As reported so far, the cases have arisen singly or in groups, of which the largest group of thirty-four cases occurred in Holland and gave a mortality of 40 per cent. The original small group of cases occurred near Prague and was reported by Lucksch. For the most part, the English, French and Belgian cases have arisen singly. As far as I have been able to learn, the United States has not been similarly affected. Abroad there seems not to have been any obvious relation between the number of vaccinations and the number of cases of encephalitis reported. Vaccination is carried on extensively in the United States, and in spite of widespread epidemic encephalitis during the past ten years, no relation to the vaccination has been discovered. In Holland, on the other hand, the height of the postvaccinal cases coincided numerically with the greater occurrence of adult cases of epidemic encephalitis.

There are several possible ways in which to account for the cases of postvaccinal encephalitis. One is to regard them as of real vaccinal origin. According to this notion, vaccine virus may exercise active neurotropic properties, and attach itself to and provoke inflammation of the nervous organs. This view is put forward by Turnbull and McIntosh in London, and for it certain experimental evidences were presented. Later studies have not upheld the view, and the purified neurovaccine of Levaditi, based on that previously prepared by testis inoculation in the rabbit by Noguchi, has been extensively employed for vaccination purposes in Europe, without having been observed to produce nervous effects or symptoms.

Lucksch in Prague and Bastiaanse in Holland incline to the view that through vaccination a latent epidemic encephalitis may be converted into an active infection. Our present knowledge of the microscopic appearance of postvaccinal encephalitis only partially upholds this contention. The lesions described sometimes do and sometimes do not conform to those which are characteristic of epidemic encephalitis. Moreover, the relation to the epidemic disease is made improbable by the clin-

ical course of the patients who do not succumb, for when recovery takes place, contrary to what tends to happen in epidemic encephalitis, it is complete. Now it is just the serious sequences of epidemic encephalitis that not only give it its sinister character but stamp it as a disease apart from all others.

Very recently, Perdrau has made an important contribution to knowledge of the underlying pathologic manifestations of postvaccinal encephalitis. His study of English cases has shown that the pronounced perivascular and other infiltrations in the disease are attended by a remarkable demyelinization of the nerve fibers, a process which is not present in epidemic encephalitis. This process may become hyperacute, so that after an illness of four days large areas in the brain and spinal cord have become demyelinized. There is anatomic similarity between the lesions in postvaccinal encephalitis and those of multiple sclerosis, but not those of epidemic encephalitis.

The combined effect of two viruses, such as is implied in the belief of Lucksch and Bastiaanse, can be tested experimentally as between vaccine virus and herpes virus. For this purpose, the guinea-pig has been employed by Olitsky and Long. A weak strain of herpes virus is selected, which alone does not survive long in the guinea-pig brain, and coincident inoculation with vaccine virus is carried out. The Levaditi C herpes virus strain was selected, as it is a weak virus and was derived originally from a case of epidemic encephalitis in man. The experiments showed that greater intensity of action of the Levaditi virus is not secured through cooperative action of the vaccine virus.

So far as the encephalitis attending the infectious diseases of childhood and antismallpox vaccination is concerned, we must again admit that we are in the region of the etiologically obscure. Whether the inflammation of the brain, which is the basic condition, results from the action of particular micro-organisms inciting the primary diseases, or whether, as seems more likely, it is produced through the operation of secondary or superimposed agencies, the future must reveal. This much can be said with confidence: The impulse to study by experimental methods the pathology of the inflammatory and degenerative diseases of the central nervous system has been profoundly favored by the experiences of a quarter of a century with the epidemic diseases of the brain, spinal cord and meninges.

We have now followed in brief the exceptional epidemiologic events of the past quarter of a century. There is, I believe, no doubt that at an earlier period in medical history, before pathology and bacteriology had attained their present development, the several epidemic diseases of the nervous system which we have been considering would have been united in a single chain of causation; and it is probable also that they would have been brought into connection with the intercurrent outbreaks of highly fatal influenza. The present attitude toward disease is, I am persuaded, more logical, and is supported by more than half a century of rewarding research in bacteriology. It seeks, as we all know, specific microbic incitants for particular diseases; and it is to the amazing results of this mode of study of disease that we owe those great advances in the knowledge of our time which have yielded effective measures of prevention and even of cure in certain infectious diseases previously both frequent and destructive.

Sixty-Sixth Street and Avenue A.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

PAROIDIN. — Parathyroid Extract-Hanson.—An aqueous solution containing the active principle or principles of the parathyroid gland of cattle and having the property of relieving the symptoms of parathyroid tetany and of increasing the calcium content of blood serum. It is standardized by its capacity to increase the blood serum calcium in parathyroidectomized dogs: one Hanson unit being defined as one one-hundredth of the amount of solution required to produce an increase of 0.001 Gm. of calcium (Ca) in the blood serum of parathyroidectomized dogs weighing approximately 15 Kg., the increase being determined after administrations to dogs (twenty-four hours after operation) of a sufficient quantity of solution to cause an average increase in blood serum calcium of 3 mg. within six hours.

Actions and Uses.—Paroidin is of pronounced and definite value in the treatment of tetany. It has been used experimentally, but with inconclusive results, in a number of other conditions, such as chorea, gastric and duodenal ulcers, and delayed healing of wounds. To guard against the serious consequences of hyperthyroidism, excessive doses of paroidin must be avoided and large doses of the preparation must not be administered without estimation of the blood serum calcium.

Dosage.—The average adult dose of paroidin is 0.2 to 0.4 cc. (30 to 60 Hanson units) every twelve hours for five or six days, never more than ten days in succession. Treatment should then be discontinued for a week or two, to be resumed if necessary. For children the initial dose should not exceed 0.1 to 0.2 cc. (15 to 30 Hanson units).

Paroidin is administered subcutaneously or intramuscularly; not intravenously.

Manufactured by Parke, Davis & Co., Detroit. U. S. patent applied for. U. S. trademark.

Paroidin, 5 cc.: Each cubic centimeter contains 150 Hanson units.

Fresh bovine parathyroid glands from which fat and connective tissue have been removed are ground and extracted with dilute hydrochloric acid (approximately 0.5 per cent) at the boiling temperature for about one hour. The mixture is then chilled, filtered to remove fat, and the filtrate treated with an aqueous solution of trinitrophenol to precipitate the active principle together with some protein. The precipitate is collected and extracted with acetone and alcohol containing hydrochloric acid. An excess of acetone is then added to precipitate the active fraction in the form of a water-soluble powder, which is then redissolved in water, diluted to the proper potency, sterilized, and submitted to standardization and sterility tests.

SQUIBB'S VITAVOSE.—A maltose-dextrin preparation representing the water-soluble extractives of malted wheat germ. It is composed, approximately, of maltose, 38 per cent; dextrins, 20 per cent; soluble proteins, 8 per cent; soluble amino and other nitrogenous substances, 7 per cent; mineral salts, 4 per cent; moisture, 3 per cent. It is standardized physiologically to contain at least 100 times the amount of the antineuritic factor (vitamin B) contained in fresh, raw, certified, whole cow's milk. The nutritive value of 500 Gm. corresponds to approximately 1,940 calories.

Actions and Uses.—Vitavose is used as an adjunct in the diet of children and invalids and where there is a need for greater amounts of vitamin B than are furnished by the individual's customary diet. It may be used to supplement the carbohydrate and vitamin B content of cow's milk.

Dosage.—Vitavose may be used in milk mixtures in approximately the same proportions by weight as lactose, or in amounts to meet the carbohydrate requirements of the invalid in place of or in addition to other carbohydrates. When vitavose is used because of its vitamin B content, the manufacturer recommends that children and adults be given 15 Gm. (1 tablespoonful) one to three times a day.

Manufactured by E. R. Squibb & Sons, New York. U. S. patent 1,541,263 (June 9, 1925; expires, 1942). U. S. trademark 177,061.

Vitavose is prepared by freeing wheat germs of oil, cooking, malting and extracting under conditions designed to assure maximum extraction of the nutritive elements and to preserve the vitamin B content. The clarified extract is then brought to dryness.

It occurs as fine golden-yellow granules possessing an agreeable malty taste. It is very hygroscopic and readily soluble in water.

The maltose in Squibb's vitavose is determined by the Munson and Walker General Method, Official and Tentative Methods of Analysis of

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the A. O. A. C., ed. 2, p. 190. The dextrin is determined by the method described in Leach: "Food Inspection," ed. 4, p. 654. The estimation of protein, soluble amino and other nitrogenous substances is made by the method described in the "Method of Analysis, A. O. A. C.," 1919, p. 168, chapter 14, par. 5; of moisture, ibid, p. 177, par. 2; of ash (Fe and Ca), ibid, pp. 39-41. Malto-Dextrins are determined by evaporating the alcoholic filtrate and washings to dryness under vacuum and determining the reducing sugars on the residue both before and after inversion, the difference between these results being calculated as dextrose and reported as malto-dextrins (Inversion Method, p. 186, Munson and Walker General Method, p. 190, A. O. A. C., ed. 2). The vitamin B content is determined by a modification of the method described by Osborne and Mendel (*J. Biol. Chem.* **34**: 743, 1922).

GENTIAN VIOLET MEDICINAL (See New and Nonofficial Remedies, 1928, p. 172).

The following dosage form has been accepted:

Gentian Violet Capsules-Swan-Myers, 1 grain: Each keratin coated capsule contains gentian violet medicinal-N. N. R., 0.65 Gm.; with lactose. Prepared by the Swan-Myers Company, Indianapolis.

EPHEDRINE HYDROCHLORIDE-PEMCO (See New and Nonofficial Remedies, 1928, p. 176).

The following dosage forms have been accepted:

Capsules Ephedrine Hydrochloride-Pemco, ¼ grain.
Capsules Ephedrine Hydrochloride-Pemco, 0.3 Gm.: Each red capsule contains ephedrine hydrochloride-Pemco without diluent.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

VITALIPON NOT ACCEPTABLE FOR N. N. R.

Vitalipon, claimed to be a 5 per cent solution in olive oil of lipoids extracted from vegetable and animal embryonic organs with the addition of cajeput oil, is presented by C. G. Crosby, New York. It is stated that "Vitalipon is a general tonic for parenteral dietetics, containing colloidal lipoid complex with 0.1 gramme or 1.54 grains of active matter, inclusive of Vitamine factor A in 2.0 c.m.³ of neutral, activated, finest olive oil and 0.1 gramme of oleum cajeputi. It is not a matter of chemicals of any kind but of a highly concentrated solution in olive oil of natural lipoids (phosphatides and cholesterines) in the proportion as they exist in vegetable and animal embryonic organs. . . ."

Vitalipon, according to a typewritten prospectus, is supplied in four different sized ampules: Vitalipon I, containing 1 cc.; Vitalipon II, containing 2 cc.; Vitalipon III, containing 3 cc., and stated to contain "strengthened cholesterine"; and Vitalipon V, containing 5 cc. and stated to contain "cholesterine and oil of Eucalyptus combined with camphor" and especially recommended for pneumonia, la grippe and various kinds of typhus. Four different packages of ampules were submitted. Three of the packages bear labels claiming amounts of active "mass" or "matter" that differ from each other and from the statement quoted above. Another package bears no label, but on the inside is written "For Carcinoma." On the back of two of the packages are printed references to what appear to be the publications of Dr. O. Schaer, as follows: "Against the decline of productive power. Increase of the fundamental human forces within a useful term." "Improvement in the results of treating cancer." "For success against deficiency and discontent," etc.

In the material submitted in favor of Vitalipon, the statement is made that "Vitalipon is the outcome of over thirty years' research work by Dr. O. Schaer of Zurich, Switzerland, in his efforts to develop a cure for carcinoma." In addition to the brief statement of composition, uses, etc., submitted by C. G. Crosby, three additional documents, all written by Dr. Schaer, were submitted:

Document 1, a typewritten copy over the typewritten signature of Dr. O. Schaer, outlines the theory of Vitalipon therapy and the kind of diseases in which, according to Dr. Schaer, the therapy has been efficacious. The theory on which the Vitalipon claims are based is that the particular lipoids in Vitalipon have a specific stimulation on metabolism (improving nutrition). This document, in addition, gives the names of various European physicians who are said to have used Vitalipon successfully in various maladies. The claims are not accompanied by anything that even remotely resembles scientific evidence. At no point are controlled experiments given or cited. It appears to be the vaguest and most specious kind of propaganda literature. Vitalipon is recommended in almost every type of disease, including cancer, tuberculosis, neurasthenia, in all conditions of deficiencies or disturbances of the endocrine glands. The following case is cited as evidence of the value of Vitalipon in advanced tuberculosis: "A case of acute tuberculosis of the spine. The patient, after a very short time, had so far recovered that after another few months he was able to go for walking tours in the Alps, from where he sent his doctor greetings." In this typewritten statement, further unscientific and uncontrolled claims are made by Dr. Schaer for the efficacy of Vitalipon in connection with surgical operations, in reducing the general depression following roentgen-ray treatment, in "cases of so-called chronic catarrh of the stomach," in tuberculosis, in syphilis, in gonorrhea, in disturbances of the endocrine glands (called in the pamphlet *sanguine glands*), especially the thyroid. It is hinted by Dr. Schaer that Vitalipon, especially combined with diathermy, is more efficient than the rejuvenation processes of Steinach and Voronoff.

As an example of the unscientific character of this typewritten document of Dr. Schaer, the following statement may be quoted: "It is not difficult to realize that the treatment of obstinate sexual neurasthenia must have produced a number of our successes, improvement of the general well being will put an end to many stray thoughts, and lift isolated centers out of a state of irritable deficiency. The diathermic treatment of the sanguine [endocrine] glands in the state of deformation combined with a simultaneous Vitalipon treatment has brought us many a success, which it would be worth trying out and examining more closely." It would be interesting to know just what Dr. Schaer means by this statement. If the therapy is actually a success it needs no further trial, and it needs no examination. It is merely a question of extended use. Dr. Schaer even claims that "several bad and obstinate cases [of diabetes] have disappeared under the effects of Vitalipon." Where they have disappeared to is not clear from the text; but Dr. Schaer recommends Vitalipon with insulin.

The two books published by Dr. Schaer, and submitted to the Council by C. G. Crosby, are "Gründlagen fur diätetische Hochleistungen" and "Arbeitserfolg gegen Minderwertigkeit und Unzufriedenheit." The latter was published in 1925. It is difficult to characterize these books except by saying that they are hybrids between the vagaries of a faddist and a quack. They have no scientific value. Various lipoids and vitamin products are recommended; but there is not an iota of scientific evidence proving the actual nutritional value of the Vitalipon product now under discussion, beyond that which may be obtained from normal food products by mouth, containing adequate lipoids and vitamin material.

The entire printed and typewritten "literature" submitted in support of Vitalipon has all the earmarks of crude "patent medicine" propaganda, except for one point; namely, that according to the American representative, C. G. Crosby, no direct advertisement is being made to the laity.

At the end of the typewritten paper by Dr. Schaer the following specious plea is made to the medical profession: "In this age of wireless transmission of messages everybody understands the necessity of tuning receivers and sender. The prescription of medicines is also a kind of transmission of physical energies. The receiver, i. e., the patients, must be tuned that the effect aimed at shall be as complete as possible, from whichever direction the induction may come which we claim the right to call the cure. This is the purpose of the parenteral lipoid dietetics." It is to be hoped that the rank and file of American physicians will not be "tuned" by this type of expert.

Vitalipon is unacceptable for New and Nonofficial Remedies because it is an unscientific and indefinite mixture marketed under an uninforming proprietary name and with unwarranted therapeutic claims.

This report was sent to the American agent, who forwarded it to Dr. Schaer in Switzerland. In reply, Dr. Schaer submitted through the American agent a mass of material which, when examined, did not permit modification of the conclusions of the original report.

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SATURDAY, JULY 7, 1928

THE CONTROL OF RHEUMATISM

Of the major problems of medicine, few have been more refractory to solution than the problem of arthritic and rheumatoid disability. From the time of Hippocrates this problem has been recognized as an entity; the ravages of arthritic disorders affected men in the stone age, and even reptiles of geological periods long antedating the advent of man. In spite of the fact that arthritis is the oldest disease entity of which there is historical record, investigative work as to its causes has been less intense and knowledge of its true nature has remained more meager than with many less widespread conditions. The explanation is to be found partly in the refractory nature of the disease itself but also in the fact that for some reason the rheumatoid problem has been thrown into the limbo of uninteresting and hence unprofitable chapters of medicine. As a result, hosts of sufferers drift into the hands of unscrupulous charlatans and contribute to the commercial success of various cults. However, an awakening is now taking place in Europe and in America to the importance of arthritis from the economic as well as from the purely humanitarian standpoint. Europe has realized longer than we have the magnitude of the problem and the importance of providing facilities for the care and treatment of patients with arthritis. Presumably this is the result, in part, of the many established watering places and kurorts, some of which have had a continuous existence of 2,000 years. Within the rather narrow limits of conventional therapy, the facilities and benefits to be expected at such places have in general exceeded those available in this country.

Before the war a large movement had started in England under the direction of the Committee for the Study of Special Diseases, which, after a careful survey, concluded that of all the disease conditions in the United Kingdom arthritis, with its congeners, most required attention. This movement was interrupted by the war. Since the war another and larger action has developed in England and on the continent. Some years ago the Society for Medical Hydrology established the International Committee for the Study of Rheumatism with representatives in the leading countries of Europe. With the return to more nearly normal conditions, twenty-four countries are now cooperating in an organized attack on the problem. In different countries, groups of interested and qualified physicians have been selected to assist in accumulating economic and clinical statistics and in providing facilities for laboratory work and the institutional care of arthritic patients.

Arthritis constitutes one of the truly great scourges of society. The importance of the problem of tuberculosis is recognized today even by the layman. It comes as a surprise to learn that in Berlin, for example, the disability from arthritic and rheumatoid disorders exceeds that from tuberculosis in the proportion of more than three to one and that there are more than eight times as many cases of arthritis as of tuberculosis. Under the fuller industrial organization which workmen's compensation acts and similar insurance movements have brought about in the last few years, the extent of arthritic disability is assuming large importance from the standpoint of profit and loss to the interests concerned. Influences of this nature, together with the slowly growing appreciation of the importance of the disease from the purely medical standpoint, have brought about a sharp awakening on the part of governmental and national agencies in certain countries, particularly Sweden. One evidence of this is the recent creation there of four hospitals for the exclusive care of arthritic patients, some of them directly under university auspices. Another movement of similar import is the series of demonstration clinics held in London during March and financed chiefly by the Red Cross with the aim of establishing a permanent clinic in London for the treatment of rheumatoid diseases. Part of the purpose of the movement was to demonstrate the importance of early and adequate care of the arthritic patient, and particularly the value of various forms of physical therapeutic procedures in such conditions. Another indication of the awakening interest in England was the conference in Bath in May on rheumatic diseases, held under the auspices of the ministry of health.

Enough has been said to indicate that a forward movement of wide extent is taking place in Europe toward the better understanding and treatment of arthritic disorders. Over a year ago an effort was made to arouse interest in this country in the direction of cooperation in this world-wide program. While in Europe, Dr. Louis B. Wilson had his attention called to this general movement and was asked to assist in the establishment of a committee representative of the United States. This he undertook with the result that a dozen physicians from various parts of the

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United States, all of whom have been interested in their respective ways in the problem of arthritis, have been organized into an American committee for the purpose of entering upon the problem; this committee[1] held its first meeting, March 17, in Philadelphia.

The magnitude of the problem will not permit of early solution, but plans have been laid for arousing the interest of medical men as well as the lay public in the importance of the subject. Among matters of primary interest are systematization of nomenclature and other matters fundamental to the interchange of ideas; the compilation of statistics; the development of coordinated research; the evaluation of various forms of treatment; the better education of the medical student in regard to the disease, and the extension of information among practitioners regarding the rheumatoid problem and the existing therapeutic measures of proved value.

The importance of more extensive research as to the nature of the processes resulting in arthritis cannot be questioned. Equally important, however, is dissemination of the relatively large amount of information already accumulated. Thousands of persons with arthritis could be favorably influenced by existing tried and proved measures if knowledge of them were more current in the medical profession. One of the first activities of the American Committee on Rheumatic Diseases will be the compilation of a brochure setting forth briefly an outline of what is known regarding arthritis, with the double purpose of bringing the matter before laymen as well as physicians.

The clinical expressions of the problem of arthritis are so varied that it can be safely said that few other syndromes in medicine require so much time and experience for the evaluation of their signs and symptoms. Notwithstanding this fact, there are few other diseases which so readily invite careless and inefficient treatment. The history of the treatment of arthritis is marked by discarded panaceas and by hosts of remedies that have not withstood the test of time. The danger of uncritical enthusiasm for new measures is now as great as ever.

Considerable importance therefore attaches to the inauguration of a movement in this country toward solution of the devastating problem of arthritis. In this refractory field, early accomplishments of signal value are hardly to be expected. Coordinated and sustained effort must inevitably establish a foundation from which, sooner or later, will spring an awakened sense of responsibility toward arthritic patients, a better understanding of the problem as a whole, decreased suffering, and a reduction of the large economic loss now borne by society.

1. The members of the committee are: Dr. Lewellys F. Barker, Baltimore; Dr. Charles C. Bass, New Orleans; Dr. Russell L. Cecil, New York; Dr. Russell L. Haden, Kansas City; Dr. M. S. Henderson, Rochester, Minn.; Dr. Joseph L. Miller, Chicago; Dr. J. Archer O'Reilly, St. Louis; Dr. Robert B. Osgood, Boston; Dr. Rae E. Smith, Los Angeles; Dr. Hans Zinsser, Boston, and Dr. Ralph Pemberton, Philadelphia, chairman.

POISEUILLE AND THE MERCURY MANOMETER—1828

The present year marks the three hundredth anniversary of the publication of William Harvey's "De Motu Cordis." This significant event—the beginning of a rational physiology of the circulation—will be commemorated by appropriate celebrations all over the world. In the words of Seelig,[1] Harvey, following the closest knit inductive reasoning, based on clear-cut experimentation and guided by the indispensable factor of healthful imagination, proved, step by step, that the heart was the central pump that forced the blood in a circulating current. Link by link he forged the chain of evidence. Finally, in 1628, after seventeen years of deadhouse study and animal experimentation, he published the famous Exercitatio anatomica de motu cordis et sanguinis in animalibus; this thesis easily withstood all onslaughts.

A logical sequence of the discovery of the circulation was the demonstration of the pressure to which the blood is subjected in various parts of the closed vascular system. The importance of this is readily appreciated at the present time, when the measurement of arterial pressure is part of the routine of every physician. Just prior to the beginning of the twentieth century the estimation of blood pressure was still a task relegated to the physiologic laboratory. Within a few years, however, the technic of such measurements on man was simplified and improved so that they rapidly acquired clinical prominence. Clendening[2] has pointed out that by 1905 enough data had been accumulated to make a few life insurance companies realize that the procedure would be useful to them. Since then many thousands of persons' blood pressures have been recorded, their terms of life from the period of the reading of the pressure noted, and the changes of the internal organs after death examined, so that there is open to the physician an immense accumulation of data about the condition.

The year 1928 marks the centennial of an important step in the development of the methods for ascertaining blood pressure. The classic experiment of Stephen Hales in which he observed the height to which the blood rose in a tube inserted into the crural artery of a horse was published in 1733. The shortcomings of Hales' procedure are obvious. The amount of blood withdrawn from the circulation thereby is sufficient to change the pressure conditions in smaller animals; and more important still is the circumstance that blood tends to clot rapidly extravascularly and thus put an end to the observations. These difficulties were met by Jean Léonard-Marie Poiseuille[3] of Paris in 1828 by the introduction of the mercury manometer, which was applied to the measurement of blood pressure under

1. Seelig, M. G.: Medicine: An Historical Outline, Baltimore, Williams & Wilkins Company, 1925.
2. Clendening, Logan: The Human Body, New York, A. A. Knopf, 1928.
3. Poiseuille: Magendie's Journal de la physiologie **8**: 272, 1828; **9**: 341, 1829.

the designation of hemodynamometer. The familiar U-shaped tube filled with the heavy liquid metal decreased the requisite outflow of blood from the artery to less than one thirteenth; and coagulation was retarded by employing a strong solution of sodium carbonate to connect the vessel with the manometer. Essentially the same technic is still followed in experimental laboratories, with the added device of a float introduced by Ludwig to permit the production of graphic records on the kymograph, which physiology owes to the Leipzig physiologist also. There is accordingly real significance in the remark of Garrison in his History of Medicine that Poiseuille was the first experimenter between Stephen Hales and Carl Ludwig to make any advance in the physiology of the circulation.

HOW THE ARMY CONQUERED TYPHOID

In 1917 the United States had to mobilize in a short time about four million men. The annual typhoid incidence rate of 0.37 per thousand for American troops during the World War differs as night and day from the rate of 141.59 in the Spanish-American War. In an army of average annual strength of more than 1,500,000 in the World War, the typhoid admissions numbered 1,529; in an army of average annual strength of about 148,000, in the Spanish-American War, they numbered 20,926. The improvement seems almost incredible.

When mobilization was ordered, typhoid prevailed to a much less degree throughout the United States than at the beginning of the Spanish-American War. In the years preceding 1917 there had been a continuous reduction in typhoid in the civil population. However, the disease smoldered in hundreds of cities and towns and was actually introduced into every mobilization camp in the country except one. When the men went abroad, they were exposed to typhoid on the western front. It was known to have occurred in sectors in which most of our divisions operated. The water supplies as a rule were not above suspicion. The British and French had a large number of cases in the early part of the war, the incidence in the French armies in 1914 and 1915 being very high. The possibility, therefore, of acquiring the disease from outside sources was almost unlimited. Had preventive measures not been effective, typhoid would probably have prevailed extensively among American troops. It must not be forgotten that the American soldier was protected. Few individuals reached France with less than three doses of the saline antityphoid vaccine or one dose of the lipovaccine. Other strict measures helped. Even so, there were notable outbreaks: in the seventy-seventh division, 122 cases; in company 4, Camp Cody replacement unit, ninety-five cases; in medical department units at Curel, seventy-two cases; in motor transport camps, Marseilles, sixty-four cases; in the seventy-ninth division, sixty-one cases, and in the eighty-eighth division, twenty-one cases. The epidemiology of these outbreaks, recited in the most recent volume of our medical history of the war,[1] is interesting. The Camp Cody replacement unit left New Mexico, June 15, 1918, and arrived at Camp Merritte, New Jersey, June 21. It sailed for England, June 28, arrived at Liverpool, July 11, and left at once for St. Aignan, France. Many cases of "sea-sickness" occurred in this company in crossing the Atlantic, some of which turned out to be typhoid. The patients were hospitalized at Liverpool, Romsey, Southampton, Cherbourg and St. Aignan; but men continued to be taken ill until July 28. Tracing this outbreak to the source, it appears that there was one bacillus carrier in the company, and two men in the early stage of typhoid during the railway trip to New York. On the train, the troops got water from the type of tank usually found in railway cars, but there was a supplementary supply for company 4 which consisted of an open barrel, placed in the vestibule between two sleeping cars. The only means of obtaining water here was to dip cups or canteens in the barrel. Toilet and washing facilities aboard the train were taxed to the limit, and the water in the barrel was probably grossly contaminated. In no other instance during the war did such a large number of cases occur in one company.

The aggregate number of cases that occurred in the armies of some other nations may be noted. In the French army there were about 125,000 cases of typhoid and paratyphoid among almost 8,500,000 men called into active service. In the Italian army about 65,000 cases of typhoid or paratyphoid occurred among about 5,500,000 persons in active service. In the Belgian army, about 3,200 cases occurred among about 267,000 subjects. In the German army, about 112,000 cases of typhoid occurred from 1915 to the end of the war among a total force of about 11,000,000 men. In the Austrian army, about 171,000 cases occurred among 7,800,000 men, and in the British army, about 20,149 cases among about 4,970,000 troops. None of these armies were protected against typhoid as was the American army. Of course, none of them had an equal opportunity in view of the suddenness with which war was precipitated among them. The fact is that the American army was the only one of the seven in which the policy of mandatory vaccination of all military personnel was carried into effect, and its admission rate for typhoid was the lowest. It is assumed that the immunity was not lasting. In the future, it may be desirable to repeat the series of inoculations in time of war at intervals of less than three years. Indeed, 350,000 of our men in Europe were revaccinated in 1919. Thirty years ago in Cuba, American medical soldiers wrote one of the great chapters of medical history. They wrote another one in France.

1. Medical Department of United States Army in the World War, Vol. IX, Communicable and Other Diseases, War Department, 1928.

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Current Comment

OLD AGE AND UNEMPLOYMENT

The average duration of life among the ancients, according to L. I. Dublin,[1] was probably not over twenty years. Today, in the United States, the expectation of life is about fifty-eight years. Undoubtedly the medical profession has been a major factor in the production of this triumph. But progress brings new problems, and the world is now faced with the question of what to do with the increasing numbers of persons who have passed the age of 65. In 1890, 3.9 per cent of the total population were aged; at present, 5 per cent fall in this class. At the same time, in 1890, of men 65 years of age or over, 73.8 per cent were gainfully employed whereas in 1920 the proportion had been reduced to 60.1 per cent. The Secretary of Labor[2] looks with deep concern on the situation and believes that part of the reason for it is the custom of discharging older workers. In former days there may have been reason for releasing the occasional man at the age of 50. Bone and brawn were then more necessary in manual labor than they are now. Furthermore, a man of 50 frequently was old and felt so. Now, physical burdens are less, and with an increase in the span of life the productive period is longer. The employer who discharges a worker at 50 or 40, because he is old, "is contradicted by every mental and moral trend of the times," says Mr. Davis. Such a policy is also contradictory to present-day medical opinions of physical fitness, provided bodily condition is periodically checked up by medical examination. Medicine recognizes the danger in industry of varieties of incapacity which are more frequent as age approaches. However, with modern knowledge of the precursors of these conditions it would be possible to select those whose condition might require discharge or retirement. It is not necessary, or wise, to sacrifice persons with valuable experience for the sake of an arbitrary and irrational age rule. Medical opinion, utterance and service are qualified to exert telling influence on this aspect of the national problem of unemployment. To do so would be a benefit to medicine as well as to industry.

1. Dublin, L. I.: Health and Wealth, New York, Harper and Brothers, 1928.
2. Davis, J. J.: "Old Age" at Fifty, Monthly Labor Review of U. S. Bureau of Labor Statistics **26**:1095 (June) 1928; reprinted with permission from the North American Review, May, 1928.

No Caste in Medicine.—Is it of any great consequence to society that the physician of the present day has lost his interest in common things and has become more or less a scientific robot? Cannot society afford a caste which knows only science? No, most emphatically no! Society cannot afford any castes. Most of all it cannot afford a caste of medicine. For the practice of medicine is not now nor ever has been pure science with humanity left out. The human animal, physically but still more psychologically, is subject to too many surprising variants which may not be ignored in the diagnosis and treatment of its abnormalities. Medical science, it is true, has become more and more exact; more a real science. But humanity has changed but little in the multiplicity of its variations. Compared with pure-bred dogs and pure-bred chickens, about whose reactions we can predicate with considerable certainty, the human animal is still in a most primitive stage, not only physically but, much more so, psychologically.—Wilson, L. B.: *Minnesota Med.* **11**:365 (June) 1928.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Society News.—The Maricopa County Medical Society recently passed a resolution opposing the movement to establish a national tuberculosis sanatorium for children at Springerville, 90 miles from the nearest railroad in the White Mountains. The question was considered by the society along the principles announced by the National Tuberculosis Association for the care of the tuberculous. The chairman of the executive committee of this proposed sanatorium is Ex-Senator Ralph Cameron of Arizona and the field agent, Mrs. Mae Moran.

CALIFORNIA

Health at San Diego.—Telegraphic reports to the U. S. Department of Commerce from sixty-eight cities with a total population of 30 million, for the week ending June 9, indicate that the highest mortality rate (19.7) was for San Diego, and that the mortality rate for the group of cities as a whole was 13. The mortality rate for San Diego for the corresponding week last year was 17.6, and for the group of cities, 12 (THE JOURNAL, June 9, p. 1876).

Circulating Museum Lends Skeletons.—The University of California Museum of Vertebrate Zoology has just received two gorilla skeletons from West Africa for the study of comparative anatomy. The gorillas were killed last year, and the exportation was arranged through representatives of a missionary society. The curator, Professor Grinnell, points out that the museum's specimens are not only available for use by members of the staff of the departments of the university, but may be borrowed by others as are books from the library for legitimate, scientific or educational purposes. There are about 5,000 specimens now in use by borrowers in various parts of the United States.

Society News.—The University of California and the state department of health will sponsor institutes for public health nurses to be held on both the Berkeley and Los Angeles campuses of the university, the former, July 9-20, the latter, July 23-August 3. Only nurses having had at least two years of experience with an organization approved by the state board of health or having completed an eight months course in an approved school are eligible for the course. Among the instructors for the Berkeley institute will be seven members of the university faculty.——The San Mateo County Medical Society recently presented to Dr. Walter C. Chidester, San Mateo, a set of engrossed resolutions expressing appreciation of his service to the community in the establishment of a hospital and in the direction of it for many years.——Dr. Stanley H. Mentzer, San Francisco, addressed the San Joaquin County Medical Society, May 9, on "The Status of Gallbladder Surgery," illustrated with lantern slides.——The Pacific Physiotherapy Association was addressed, June 27, at the Hollywood Hospital, Los Angeles, by Dr. Emmanuel B. Woolfan on "Use of Physical Therapy in Industrial Practice" and by Dr. Bert L. Doane on "Cases Treated by Physical Methods."

DISTRICT OF COLUMBIA

Outbreak of Paratyphoid.—A few days after a banquet at the Business High School, Washington, about 140 students and teachers became ill. An investigation made by the city health department revealed the presence of paratyphoid organisms in the potato salad and the turkey served at the banquet.

Personal.—Dr. Mandel Sherman, director, Washington Child Research Center, has been appointed professorial lecturer on child development at George Washington University for the next academic year.——Dr. John C. Eckhardt has been appointed research physician for the Washington Child Research Center.

Health Exhibit by Parochial Schools.—The first national exhibition of health education work done in the elementary schools controlled by the Catholic Church was held at the Catholic University of Washington, D. C., recently. The exhibit was selected from material submitted by elementary pupils throughout the country and included clay models, posters, instruments and devices for disseminating facts used in health campaigns. This material was augmented by exhibits from government departments and other health agencies such as the

Red Cross, the Children's Bureau and the National Tuberculosis Association.

Recommendations to Improve Health Department.—According to an elaborate report on public health administration filed with the district commissioners by the federal bureau of efficiency, the health department of the District of Columbia "is inadequate and ineffective in many of its component activities." The report, which is based on a survey of the department by Dr. Paul Preble, U. S. Public Health Service, recommends doubling local expenditures for health safeguards and spreading the increase over a five-year period. It recommends that the administration of municipal hospitals, ambulances and medical charity activities be vested in an enlarged public health department and taken from the board of public welfare. To carry out this program, Dr. Preble's report proposes a gradual increase in annual appropriations for the health department up to $650,000 in 1932.

ILLINOIS

Pneumonia Was More Prevalent This Spring.—Contrary to custom, pneumonia was almost as prevalent during May this year as in April. According to the state department of health, a sharp decline nearly always occurs in May in Illinois. The prevalence of influenza this spring is given as the probable cause of the unusual amount of pneumonia. Although the influenza epidemic was mild, it seems definitely related to the rise in the incidence of pneumonia. The number of cases of pneumonia reported in the first four months of 1928 was 55 per cent greater than in the same period of 1927. The disease was not confined to any particular area of the state.

Personal.—Dr. Philip F. Gillette, Elgin, has been appointed to the staff of the Elgin State Hospital. Dr. Gillette formerly was a member of the staff for about eight years but has been in private practice in Elgin for the last four years.——Dr. John A. Gardiner has resigned after many years' service as health officer of La Grange Park.——Dr. John C. Dallenbach, Champaign, has been appointed a member of the board of the Outlook Sanatorium to succeed Dr. Charles B. Johnson, who was killed in an interurban accident, May 31.——Dr. Carl H. Wilkinson has resigned as coroner of De Kalb County and has accepted a position in Chicago as house physician for a group of hotels.

Chicago

Report of Committee on University of Chicago Clinic.—The special committee, appointed by the Chicago Medical Society to confer with the University of Chicago concerning the policies and operation of the University of Chicago Clinic, reported to the council of the society, June 5. Representatives of the university and members of the committee constituted a joint committee to study the problems involved. They recognized the difficulties that both institutions have to meet, the importance of establishing a policy as fair as possible to both, and the desirability of an amicable and clear understanding. The report was signed by Drs. William A. Pusey, James Warren VanDerslice and James H. Hutton for the medical society, and by Max Mason, Ph.D., president, Albert W. Sherer, member, board of trustees, and Dr. Franklin C. McLean, for the university. The report, which was approved by the council of the Chicago Medical Society, was as follows:

1. The university's purpose in establishing and maintaining its clinics (including its hospital and outpatient clinic) is to obtain the clinical material necessary for teaching and research. This being the case, it will not expand its medical service to the public beyond the limits of this purpose. The development of the University Clinics will accordingly be limited to the number of patients necessary for the university's teaching and research activities.

2. The university does not enter upon practice as a business for income per se. Hospital and ambulatory practice as a means of general income are considered to be beyond its scope. It does not undertake to exploit the pay departments or the professors' services as a means of general income for the medical school or for the hospital.

3. The plan of operation at present includes free patients, part-pay patients and pay patients. The free patients and the part-pay patients are admitted to the same service, and the only difference is their economic rating. The university will undertake to drop the designation "pay-clinic" as applied to this service, in order that its economic status may be clear and the impression not be carried by its designation that the patients are paying fully for the service they receive. Patients in the "Private Patients Clinic" will be charged fees commensurate with the usual charges made by physicians for similar services rendered to such patients.

4. In the admission of free patients the university undertakes to use every reasonable precaution to avoid the abuse of medical charity, and to maintain proper machinery for this purpose.

5. The university prefers to receive patients referred by physicians; it will give preference to such patients and will as far as possible develop its practice in this direction. It will deal with the physicians referring cases according to the usual customs of the profession. It is felt that one of the most useful functions of the clinics will be to render diagnostic service for patients referred by physicians. The university is prepared to cooperate with the profession as fully as possible in developing this function.

6. It is the policy of the university in its practice to follow the ethics of medical practice that long experience has found to be for the good of the public. It does not advertise, it does not allow solicitation of patients by any one, and it does not indulge in any methods of impressing itself upon the public beyond that which comes from honest work well done.

IOWA

Personal.—Mr. Frank H. Collins, director, Kansas State Food Laboratory at Manhattan, has been appointed health officer of Sioux City, succeeding Mr. William F. Hayes (THE JOURNAL, April 21).——Dr. Fred Moore, Des Moines, has been elected president of the Alumni Association of the State University of Iowa College of Medicine.——Dr. Guy T. McCaulliff, Webster City, has been appointed chief surgeon at the Lutheran Hospital, Hampton.——Dr. Channing E. Dakin has been appointed health commissioner of Mason City to succeed the late Dr. Matthew J. Fitzpatrick. Dr. Dakin, who has been practicing in this community for twenty-seven years, formerly was health officer for six years.

Society News.—The seventeenth annual medical clinic of the State University of Iowa College of Medicine, Iowa City, held in April, was attended by 232 physicians from various cities; among others, Dr. Louis B. Wilson, Rochester, Minn., spoke on "Some Undeveloped Resources in Medical Education."——The Sac County Medical Society gave a dinner, May 25, at Sac City, in honor of Dr. August Groman, Odebolt, who has completed fifty years in the practice of medicine.——Dr. John H. Peck, Des Moines, addressed the Marion County Medical Society, Knoxville, recently, on "Diagnostic Problems in Chronic Pulmonary Diseases," and Dr. Merrill M. Myers, Des Moines, on diagnosis of angina pectoris and coronary occlusion.——The Pottawattamie County Medical Society, Council Bluffs, was addressed, recently, by Dr. Frank E. Bellinger on "Surgical Treatment of Diseases of the Thyroid."——Dr. Henry Kennon Dunham, Cincinnati, addressed the Iowa Heart Association at the fourth annual meeting, May 11, on "Prevention of Heart Disease Is as Essential as Prevention of Tuberculosis," and Dr. Horace M. Korns, Iowa City, on "Early Diagnosis of Syphilitic Aortitis."

LOUISIANA

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce from sixty-seven cities with a total population of about 30 million, for the week ending June 23, indicate that the highest mortality rate (21.8) was for New Orleans, and that the mortality rate for the group of cities as a whole was 11.9. The mortality rate for New Orleans for the corresponding week last year was 15.7, and for the group of cities, 11.2.

Society News.—Dr. Aldo Castellani addressed the New Orleans Ophthalmological and Otolaryngological Society, April 19, on mycotic infections of the throat.——Dr. Ralph Hopkins, New Orleans, has been elected president of the Louisiana Dermatological Society for the ensuing year.——Dr. Sidney K. Simon has been elected president for this year of the New Orleans Gastro-Enterological Society; Dr. Jacob A. Storck, vice president, and Dr. Abraham L. Levin, secretary-treasurer.——At a joint meeting of the Louisiana Dermatological Society and the Orleans Parish Medical Society, New Orleans, May 21, Dr. Andrew L. Glaze, Jr., Birmingham, Ala., read a paper on "Epidermomicoses of the Soles and Palms," and Dr. Oswald E. Denney, Carville, on "Diagnosis of Leprosy," illustrated with lantern slides. Dr. James Birney Guthrie, New Orleans, president of the Orleans Parish Medical Society, presided.

MARYLAND

Anonymous Gift to Medical Library.—At the fifty-second commencement of Johns Hopkins University, June 12, an anonymous gift of $500,000 for the Welch Medical Library was announced, enabling the university to meet certain conditions laid down last year when the General Education Board gave the library fund $750,000 for the construction of the building and pledged $250,000 for its endowment. An anonymous gift of $20,000 was announced, also, for the support of work in psychiatry under the direction of Dr. Adolf Meyer, Baltimore, and $100,000 was given by an anonymous donor to be used for the Wilmer Eye Clinic. Among gifts announced for fellowships and research assistants were $3,800 from the Commonwealth Fund for two years in pediatrics; $15,000 from the Commonwealth Fund for three years in psychiatry; $3,000 from the General Education Board for laryngology, and $1,000 from the Rockefeller Institute, New York, for neurology. It was announced, according to the New York *Times*, that gifts amounting to $30,000 a year had been received for research in otology.

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Baltimore Health Department in New Quarters.—The Baltimore City Department of Health recently moved into the new municipal building next to the city hall, where it occupies all of the seventh, eighth, ninth and tenth floors, a section of the first floor and part of the thirteenth floor and the basement. The administrative office, bureau of communicable diseases and the epidemiologic department occupy the eighth floor; the bureau of nursing and the bureau of child welfare, the seventh floor; the bureau of chemistry and food, the ninth floor, and the bureau of bacteriology, the tenth floor. This is the third move made by the department of health. Before 1896 the municipal health board had offices in the city hall in common with other departments, but its chief duties then were as a repository of birth and death certificates. It moved, when larger quarters became necessary, to the old school building of Zion Church and again moved, in 1913, to larger quarters on Courtland Street. Dr. Charles Hampson Jones, the commissioner of health,

remarks that the last move has afforded better accommodations for offices and laboratories, excellent light and air "but it has lost us the psychologic effect of a building recognized by the public and our workers as one devoted to public health."

MINNESOTA

State Medical Election.—At the annual meeting of the Minnesota State Medical Association, June 11, Minneapolis, Dr. James T. Christison, St. Paul, was elected president; Drs. Adolph G. Liedloff, Mankato, and Carl O. Estrem, Fergus Falls, vice presidents; Dr. Edward A. Meyerding, St. Paul, secretary, and Dr. Earle R. Hare, Minneapolis, treasurer.

New Fellows at Mayo Foundation.—The following physicians have been appointed fellows at the Mayo Foundation, Rochester, in the subjects indicated:

Dr. Oscar H. Fulcher, Sandidges, Va., surgery.
Dr. Horace Greeley, Jr., Brooklyn, surgery.
Dr. Lawrence M. Larson, Minneapolis, surgery.
Dr. John H. Mohardt, Chicago, surgery.
Dr. Herschel B. Morton, Doniphan, Neb., surgery.
Dr. Luke W. Nabers, Miami, Fla., surgery.
Dr. Manfred U. Prescott, Chicago, surgery.
Dr. Lemar H. Davenport, Dubois, Pa., internal medicine.
Dr. Stuart W. Adler, Winona, pediatrics.
Dr. Claude Moore, Roanoke, Va., radiology.
Dr. Hans W. Heike, St. James, Minn., pathology.

NEW JERSEY

Town Quarantined for Diphtheria.—The village of Belleplain in Cape May County was quarantined about June 16 on account of diphtheria in twelve families in a total population of about 150. Guards were placed about the town to prevent persons from entering or leaving.

Decrease in Mental Patients.—The U. S. Department of Commerce announces that a census of mental patients in the two state hospitals of New Jersey in 1927 showed total of 1,402 first admissions during the year, as compared with 1,288 in 1926, and 1,317 in 1922. The increase in the number of first admissions to the state hospitals of New Jersey between 1922-1927 was relatively smaller than the growth in the state's population as a whole during that period, as shown by the fact that first admissions in 1927 numbered 37.4 per hundred thousand as compared with 39.4 in 1922. Of the patients present in these hospitals, Jan. 1, 1928, 3,052 were males and 2,950 females. The figures given are based on reports furnished by the hospitals.

NEW YORK

Claims Against Albany for Typhoid Upheld.—The appellate division of the supreme court has upheld the award of $2,000 each against the city of Albany in favor of John Wiesner, Jr., and his father for damage alleged to have been due to contracting typhoid from the municipal water supply during an epidemic in that city two years ago. These awards are said to be the first given in the state against a city as a result of disease contracted in this manner.

Society News.—Dr. William H. Park, director of laboratories, New York City Department of Health, addressed the Suffolk County Medical Society at the Central Islip State Hospital, May 31, on "Epidemiology of Poliomyelitis," and Dr. Charles L. Vaux, Central Islip, on "Motor Disturbances in Neurologic Cases," illustrated by motion pictures.——At the twelfth annual meeting of the New York State Association of Public Health Laboratories, Albany, May 21, Dr. Stanhope Bayne-Jones of the University of Rochester School of Medicine was elected president.——Dr. John E. Daugherty, Brooklyn, has been elected president of the New York State Hospital Association for the ensuing year, and Dr. Marvin Z. Westervelt, Staten Island Hospital, Staten Island, secretary.

Annual Conference of Health Officers.—The twenty-seventh annual conference of health officers and the tenth annual conference of public health nurses of the state of New York was held at Saratoga Springs, June 26-28, under the auspices of the state department of health. Among the speakers were Dr. Edward Francis, U. S. Public Health Service, whose subject was tularemia; Dr. Charles Norris, New York, the medical examiner's office in relation to public health; Dr. Charles Armstrong, U. S. Public Health Service, vaccination; Dr. Edward S. McSweeny, New York, stimulating the early diagnosis of tuberculosis; Dr. Haven Emerson, New York, public health as a private responsibility, and Drs. Harry R. Trick, president of the state medical society, and Thomas Ordway, dean and associate professor of medicine, Albany Medical College.

New York City

License Revoked.—The state board of medical examiners reports that the license of Dr. Friedrich August Richard von Strensch was revoked, April 17, 1928. Dr. von Strensch was found guilty of fraud and deceit in the practice of medicine in that he aided and abetted the illegal practice of a chemist not licensed to practice medicine.

Personal.—Funeral services for the late Dr. Hideyo Noguchi, who died of yellow fever in Africa, May 31, were held at the Rockefeller Institute for Medical Research, June 15, and interment took place in Woodlawn Cemetery. Tributes were paid to the deceased by John D. Rockefeller, Jr., Dr. Simon Flexner, and the Rev. Harry Emerson Fosdick.——Dr. Ira S. Wile gave a course of lectures on "The Problem Child" at Tavistock Square Clinic for Functional Nervous Disorders, London, England, July 2-6, for which the fee was one guinea, and conducted daily a demonstration clinic with patients.

Play Schools.—Nineteen summer play schools will open in New York in July under the direction of the Child Study Association of America to assist with the growing problem of handling children in the summer. New York, the *Times* notes, is each year taking a greater part in this work. For example, at a play school where children from two Bronx schools will be cared for this summer, the board of education will supply practically the entire staff. The courses emphasize music, homemaking, and the arts and crafts. Some play schools are conducting parent classes where child health will be one of the chief subjects. Two schools have rented unfurnished apartments which the children will renovate and furnish. Gardening and other nature work will be conducted. Of course, well-to-do parents create a summer environment for their children by moving to the country or by sending their children to camps. The poor children and those from broken homes remain in New York to play in the streets. Persons desiring to aid this cause or to obtain information about it, should write to the director of summer play schools, Mrs. Lucy Retting, 54 West Seventy-Fourth Street.

President of General Education Board Retires.—Wickliffe Rose, LL.D., retired, July 1, as president of the General Education Board of the Rockefeller Foundation to continue a tour of Europe and to represent the board in an unofficial capacity. His successor will be Trevor Arnett, vice president and business manager of the University of Chicago. Dr. Rose is said to have found the work too arduous for a man 65 years of age and requested retirement. He has been a member of the Rockefeller Foundation since 1913, was for ten years general

director of the International Health Board, and has been a member of the General Education Board since 1911 and its president since 1923, and president of the International Education Board since 1923. Previous to his association with the Rockefeller Foundation, he was dean of Peabody College and the University of Nashville, and a professor of philosophy and professor of history and philosophy of education at the university. Mr. Arnett graduated from the University of Chicago in 1898 and has been connected with the university almost continuously since as chief accountant, auditor, trustee and vice president and business manager. He was secretary of the General Education Board from 1920 to 1924.

Fraudulent Claims Harass New York.—The fraudulent claims situation in New York City has reached alarming proportions, according to Robert Appleton, president of the Association of Grand Jurors of New York County. A citizens committee, representing large business interests and the professions, has been organized to curb the situation. The committee, which has confined its investigations heretofore largely to lawyers and lay members of the so-called ring, is now undertaking to investigate the "doctor angle of the conspiracy." Mr. Appleton says that interns in the public hospitals in particular make alliances with lawyers which are a challenge to the community. They promote claims for every imaginable injury, including all kinds of alleged foreign substances in food, against the best restaurants and dairies. He says that fraudulent claims have become so prevalent that many physicians are blackmailed for alleged injuries to their patients. Liability insurance has become almost prohibitive in cost as a result of these claims. In the *Panel*, the bulletin of the Association of Grand Jurors, a deputy attorney general of the state writes that a "ring" of physicians has been in league with ambulance chasing lawyers and that they generally receive as their compensation part of the settlement of the claim. Their testimony in support of the claim, he says, reeked with perjury. These so-called physicians were invariably ready to perform any act required of them by the dishonest lawyer to aid him to increase the recovery through the claim. The deputy attorney general appeals to justices of the courts to report promptly to the department of education all illegal practitioners who have appeared before the court in any guise. He asks the public, particularly medical practitioners, promptly to advise the Grievance Committee of the department of education of such cases. Without cooperation it will be difficult to dislodge those who, "in their amazing boldness," have come to believe that their criminal activities constitute a vested interest which has indirectly received the protection of the law. The deputy attorney general says that recently a "clearing house" for abortions was discovered in New York City which was conducted by an ex-convict under an assumed name to which the title "doctor" had been added. Several patients are said to have died as a result of the abortions.

OKLAHOMA

Personal.—After about fourteen years' litigation, the state supreme court, June 5, affirmed $25,000 damages to Dr. G. Fowler Border, Mangum, against Mr. John C. Keyes, formerly owner of the Mangum Electric Company, on complaint that the latter and others had conspired to involve Dr. Border in an illegal operation for political intimidation purposes.

PENNSYLVANIA

Personal.—Dr. Martha Edith MacBride, Sharon, was recently presented with a typewriter by the members of the Mercer County Medical Society as evidence of appreciation of her years of service as secretary-reporter for the society.

Society News.—The Lackawanna County Medical Society was recently addressed by Dr. Charles M. Byrnes, Baltimore, on "Multiple Sclerosis"; by Dr. Walter E. Lee, Philadelphia, on "Surgical Treatment of Burns," and by Dr. John L. Kantor, New York, on "A Notion of Nervous Indigestion."——Dr. Harvey J. Howard, St. Louis, recently addressed the Fayette County Medical Society on "Medical, Political and Social Experiences of a Medical Man in the Hands of Manchurian Bandits."—The Cambria County Medical Society has taken options on a site for a permanent home.——Dr. William H. Schmidt, Philadelphia, addressed the Bucks County Medical Society, Quakertown, June 13, on "Treatment of Cancer."

Philadelphia

Personal.—Dr. James Torrance Rugh has been invited to spend several weeks in Labrador assisting Sir Wilfred Grenfell in medical work. Dr. Rugh is professor of orthopedic surgery at Jefferson Medical College.

Dr. Barr Appointed Executive Physician.—The dean of the University of Pennsylvania Graduate School of Medicine announces that Dr. Everett S. Barr has been appointed executive physician of the graduate hospital of the university and will be in executive charge over the clinical work of the hospital after September 1. Dr. Barr is now medical director of the Philadelphia Hospital for Mental Diseases, an institution of 4,400 beds, from which position he has resigned to go to the graduate hospital.

Diphtheria Immunization Campaign.—A drive to immunize preschool children against diphtheria in Philadelphia was made, June 4-22, with health agencies and other organizations taking part. The department of public health sponsored the campaign, and members of the staff of the department did the inoculating. Seventy public schools and eight parochial schools were used as centers for the work. The mayor issued a proclamation urgently advising parents to have their children immunized. This was displayed in moving picture theaters, posters were distributed, and public utility companies and life insurance companies distributed circulars to show the purpose of the campaign.

University Given Fund for Study of Heart Disease.—The provost of the University of Pennsylvania announced, June 21, that Edward W. Robinette, an alumnus, had given $250,000 for the establishment of a clinic for the study, treatment and prevention of diseases of the heart and circulatory system. The donor will add another $250,000 to the resources of the clinic as needed. In due time he hopes also to present to the university at least $500,000 for the development of education in the liberal arts. Mr. Robinette is convinced that through a clinic of this kind a great contribution can be made to human welfare. He is aware that modern living conditions put an unusual strain on the physical resources of the leaders of our civilization and that their lives are frequently cut short by heart disease at the peak of their usefulness to the community. He realizes that heart disease at present causes a greater loss of valuable human energy than any other disease. Mr. Robinette desires that should some other disease displace heart disease from the position of first importance, the clinic shall then concentrate on the study of such disease. Thus the work of the clinic will not be restricted to a field in which there no longer exists a predominating menace to human life.

TENNESSEE

Health at Knoxville and Nashville.—Telegraphic reports to the U. S. Department of Commerce from sixty-nine cities with a total population of about 31 million indicate that, for the week ending June 16, the lowest mortality rate (6.4) was for Knoxville, and the mortality rate for the group of cities as a whole was 12.2. The mortality rate for Knoxville for the corresponding week last year was 11.2, and for the group of cities, 11.6. It appears that the highest mortality rate (22.6) among the cities for this week, and the highest infant mortality rate (142) were for Nashville.

Personal.—Dr. William K. Sheddan, Columbia, celebrated his fiftieth year in the practice of medicine, June 12, at his country home. Many of his associates and friends were present, and a typical southern dinner was served on the veranda. Among the guests were the president of the state medical society, Dr. Kirby S. Howlett, Franklin; Drs. Harrison H. Shoulders, Nashville, secretary, state medical society, and Sam P. Bailey, president of the Middle Tennessee Medical Society, and members of the Maury County Medical Society. Dr. Sheddan was presented with a silver pitcher as a token of esteem. ——Dr. Robert Sebastian Cowles, Franklin, has been appointed health officer for Greene County.

Changes in Faculty at Vanderbilt.—The board of trustees of Vanderbilt University has made the following changes in the faculty of the medical school: Dr. C. Sidney Burwell has been made professor of medicine and physician-in-chief of the hospital; Dr. Hugh J. Morgan has been appointed to a professorship of clinical medicine; Dr. Horton R. Casparis has been made professor and head of the department of pediatrics; Dr. John B. Youmans has been appointed to associate professor of medicine; Dr. Tinsley R. Harrison, to assistant professor of medicine; Dr. Beverly Douglas, to associate professor of surgery; Dr. Robert E. Sullivan, to assistant professor of ophthalmology and otolaryngology; Dr. Christopher C. McClure, to assistant professor of surgery in charge of radiology, and Dr. William Litterer, to assistant professor in preventive medicine.

Society News.—Dr. Joseph J. Waller, Oliver Springs, addressed the Roane County Medical Society, May 22, on

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"Diseases We Know Little About, Including Pellagra and Cancer."——Among others, Dr. Paul H. Faucett, Columbia, addressed the Five-County Medical Society (Hardin-Lawrence-Lewis-Perry-Wayne), May 29, on "Early Diagnosis and Management of Prostatic Disease," and Dr. William D. Haggard, Nashville, "Cancer of Colon and Rectum."——Dr. Howard A. Kelly, Baltimore, addressed the Knox County Medical Society, May 15, at a dinner in Whittle Springs on "History and Progress of Surgery."——During May, the Davidson County Medical Society and the Nashville Academy of Medicine was addressed by Dr. Isaac A. Bigger, Jr., on "Massive Collapse of the Lung," and by Dr. Hollis E. Johnson on "Iodized Oil in Chest Diagnosis."

VERMONT

Hagapos Couymondjian's License Revoked.—The Vermont State Board of Medical Registration, June 20, revoked the license issued, January 1, to Dr. Hagapos Couymondjian to practice medicine. The secretary states that this license was obtained on forged reciprocity papers from the Maine Board of Registration. The secretary of the Maine board states that Couymondjian is not registered in Maine, never presented credentials to prove his graduation from medical school, could not answer the simplest question put to him by the board, and was literally thrown out and told not to appear before the board again. A letter given to Couymondjian by the secretary of the Maine board to permit him to go to St. Agatha for three weeks to assist in an emergency was the basis for the forged signature and seal used in the blank presented to the Vermont board.

WEST VIRGINIA

Society News.—Wayne County has organized a medical society, and was given a charter at the recent annual meeting. Wayne County formerly had a medical society but, owing to bad roads and the difficulties of travel in those days (1919), the society was discontinued. The road situation has improved greatly now.

State Medical Election.—At the sixty-first annual meeting of the West Virginia State Medical Association, Fairmont, May 21-24, Dr. Harry M. Hall, Wheeling, was elected president; Drs. James A. Duff, Martinsburg, Walter C. Swann, Huntington, and Benjamin F. Bone of Moundsville, vice presidents; Drs. Thomas M. Barber, Charleston, treasurer; James R. Bloss, Huntington, editor, and Raymond H. Dunn, South Charleston, chairman of the council. Mr. Joe W. Savage was reelected secretary. Dr. Hall, according to the *West Virginia State Medical Journal*, has served the state association for about twenty years in various offices and committees. He is a former president of the Ohio County Medical Society. The next annual meeting will be at Martinsburg.

GENERAL

Renewal of Permits Under National Prohibition Act.—Physicians holding permits under the National Prohibition Act, entitling them to prescribe and use intoxicating liquor, who desire to retain those privileges during 1929 must file renewal applications on or after July 1, but not later than August 31. Application should be filed with the prohibition administrator having jurisdiction over the district in which the physician practices. For good cause shown, the prohibition administrator may grant an extension of time for filing application, but the granting of such an extension is discretionary with that official, and in no case may the time limit be extended beyond November 30. Physicians failing to make timely application must thereafter apply as for a new permit, if permit privileges are desired. Applications should be submitted in duplicate on form 1404, copies of which may be secured from the offices of the prohibition administrators.

Birth, Death and Infant Mortality Rates Lower.—In twenty-three of the thirty-three states for which the U. S. Department of Commerce had figures for the last two years, the birth rates were lower in 1927 than in 1926. The highest birth rate in 1927 (28.8 per thousand of population) was for North Carolina and the lowest (13.6) was for Montana. The death rates for 1927 were also lower than for 1926 in twenty-eight of the thirty-three states. Vermont had the highest death rate (13.9) and Idaho the lowest (7.1). The infant mortality for 1927 was also lower than in 1926 in thirty of the thirty-three states for which reports were available for both years. Arizona had the highest infant mortality rate (125.8) in 1927 and Oregon the lowest (47.5). Among forty-eight cities of 100,000 or more population in 1920, the infant mortality rates in 1927 were lower in forty-two of them than they were in 1926, the lowest in 1927 (41.4) being for Seattle and the highest (87.1) for Norfolk, Va.

No Rabies in Some Countries.—The weekly bulletin of the New York City Department of Health comments on an article on rabies by Drs. Thurman B. Rice and Norman Beatty, both of Indianapolis, in the *American Journal of Public Health*. Sweden, it is said, has not had any rabies since 1866, when laws against the importation of dogs went into effect. Ireland, which quarantines all immigrant dogs for six months, has not had any rabies for twenty years. Australia has remained free through similar measures. England, by stringent muzzling laws, rid itself of rabies in 1902, but the disease reappeared during the World War when enforcement was relaxed. Strict measures since the war, however, have resulted in the absence of cases since 1922. In contrast to these countries, as to rabies, the United States keeps company with Russia, Austria and Italy, where enforcement of laws is lax. In 1927, in New York City, 2,329 persons were bitten by dogs; 659 persons were bitten by rabid dogs and of these six died. This was an increase of 130 per cent bitten by rabid animals over the year 1926.

Society News.—Forty-nine applicants were examined by the American Board of Otolaryngology at Minneapolis, June 11; forty-six were granted certificates. The board will hold an examination in New York, October 12, and in St. Louis, October 15. Those desiring to come before the board should advise the secretary, Dr. William P. Wherry, 1500 Medical Arts Building, Omaha.——At the annual meeting of the American Dermatological Association, Washington, D. C., April 30-May 2, Dr. Joseph Grindon, St. Louis, was elected president; Dr. Fred Wise, New York, vice president, and Dr. Clarence Guy Lane, Boston, secretary-treasurer.——At the annual meeting of the Catholic Hospital Association of the United States, Cincinnati, June 23, Alphonse M. Schwitalla, Ph.D., dean of the School of Medicine of St. Louis University, St. Louis, was elected president, and Rev. Charles B. Moulinier, Milwaukee, executive director.——At the annual meeting of the American Association of Oral and Plastic Surgeons, Rochester, Minn., June 15-16, Dr. Robert H. Ivy, Philadelphia, was elected president; Dr. Vilray P. Blair, St. Louis, vice president; Dr. Ernest Fulton Risdon, Toronto, Ont., Canada, secretary-treasurer, and Dr. Carl W. Waldron, Minneapolis, librarian.——At the annual meeting of the American Association of Pathologists and Bacteriologists, Washington, D.C., May 1-2, Dr. Edward B. Krumbhaar, Philadelphia, was elected president; Dr. George H. Whipple, Rochester, N. Y., vice president; Dr. Howard T. Karsner, Cleveland, secretary, and Dr. Frank B. Mallory, Boston, treasurer. The next meeting will be in Chicago, March 28-29, 1929.——Dr. Matthias Nicoll, Jr., Albany, N. Y., was elected president of the Conference of State and Provincial Health Authorities, St. Paul, June 8-9, and Dr. Albert J. Chesley, St. Paul, was reelected secretary.——At the annual meeting of the American Urological Association, Chicago, June 7-9, Dr. Homer G. Hamer, Indianapolis, was elected president and Dr. Alexander Randall, Philadelphia, was reelected secretary.——Dr. Frank W. Hartman, Detroit, was elected president of the American Society of Clinical Pathologists, Rochester, Minn., June 8-11; Dr. James H. Black, Dallas, Texas, president elect and Dr. Harry J. Corper, Denver, secretary.——At the annual meeting of the American Laryngological Association, Washington, D. C., May 1-3, Dr. Charles W. Richardson, Washington, D. C., was elected president and Dr. George M. Coates, Philadelphia, secretary.——Dr. Edward G. Martin, Detroit, was elected president of the American Proctologic Society, Rochester-Minneapolis, June 9-12, and Dr. Walter A. Fansler, Minneapolis, secretary.——The Association of American Medical Colleges will hold its thirty-ninth annual meeting at Indianapolis, October 29-31, with headquarters at the Hotel Claypool; local arrangements are in the hands of Drs. Charles P. Emerson, dean of Indiana University School of Medicine, Indianapolis, and Burton D. Myers.——Dr. Eugene L. Opie, Philadelphia, was elected president of the National Tuberculosis Association at the annual meeting, Portland, Ore., June 20, and Dr. Charles J. Hatfield, Philadelphia, was reelected secretary.——The Inter-State Post Graduate Association of North America will meet at Atlanta, Ga., October 15-19, under the presidency of Dr. Lewellys F. Barker, Baltimore. There will be diagnostic clinics, symposiums and addresses by well known clinicians of the United States, England, Ireland, Scotland, Switzerland, Italy, France, Argentina and Canada. The president elect of the Inter-State Post Graduate Medical Association of North America is Dr. John B. Deaver, Philadelphia, and the managing director, Dr. William B. Peck, Freeport, Ill.——The fall meeting of the American Chemical Society will be at Swampscott, Mass., 12 miles from Boston, September 10-15. The general chairman of the committee is Gustavus J. Esselen, Jr., 246 Stuart Street, Boston.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 2, 1928.

Decline of Emigration

During the year that ended last March there was a considerable decline in emigration from this country compared with the preceding year. In the first quarter of 1928 British subjects emigrated to non-European countries to the number of 29,185, as compared with 36,866 in the same period of 1927. Emigrants to the British Empire during the first quarter of 1928 showed a decrease of 6,088 compared with the first quarter of 1927, and of 16,000 in the twelve months that ended in March, 1928. British emigrants to the United States in the first quarter of 1928 numbered 5,108, as compared with 6,657 in the same period of the preceding year. The official quota of British immigrants to be admitted to the United States during the year ended June 30, 1928, is 34,007 and was the same for 1926-1927; the number recorded as having left for the United States in the twelve months that ended with March, 1928 and 1927, was, respectively, 24,113 and 27,919.

Antivaccinationists Defeated in the Irish Free State

In no country in the world has the individual so much liberty as in England, and this even to the extent of his detriment. Alone among the countries of Europe, vaccination has been allowed to fall into desuetude because of consideration for the "conscientious objector" to vaccination. But Ireland is a very different country, in which the people in some ways are more akin to the Latin races. The difference is well illustrated by the failure of the antivaccinationists there. A bill was introduced into the dail to render the vaccination laws identical with those of England. Heretofore there has been no conscientious objection clause in the Irish law on vaccination. The bill received a good deal of support from a certain number of members of all parties but was opposed by the government. The minister of public health said that no body of medical opinion was in favor of the bill and that the official medical bodies had passed strong resolutions in favor of the existing vaccination laws. The amendments to the vaccination law in England had brought about a disastrous position with regard to smallpox. In the event of an outbreak of smallpox in Ireland there was the additional danger that very few of their physicians had any experience with the disease. The minister was unanimously supported by the physicians of all parties in the dail. Dr. P. J. O'Dowd said that the reason they had no smallpox in Ireland was the success of compulsory vaccination. Dr. V. J. White could not see how the man in the street could acquire the scientific knowledge qualifying him to express an opinion on vaccination. Sir James Craig, professor of medicine in Trinity College, Dublin, said that they should do something to protect children who were not able to study the matter themselves. The "conscience clause" had resulted in 15,000 cases of smallpox in England last year. The bill was rejected by 75 votes to 39, although an active agitation in its favor had been carried on and all the deputies were inundated with propagandist antivaccination literature from London.

"A Tax on Pain"

In a letter to the press, Dr. Graham Little (dermatologist and member of parliament for London University) denounced the 33 per cent import duty on radium in the telling phrase of a "tax on pain." He referred to the fabulous price which hospitals have to pay for this invaluable substance and pointed out that it offered one of the few present hopes for the relief and cure of cancer, while there are waiting lists of cancer sufferers deprived of treatment for want of money to buy radium. The object of the tax might be the laudable one of encouraging the home production of radium, but it seemed little short of barbarous that the government should place any unnecessary financial obstacle in the way of securing relief and possible cure of the most terrible of all diseases. As a result of this denunciation the government has abandoned the tax.

"The Personal Health Association"

If government activities, the formation of health societiets and all sorts of propaganda were effective there should now be very little disease. A novel association has been formed under the auspices of the British Medical Association and the Institute of Hygiene and is called the Personal Health Association. The chairman of the council of the association has stated its object as follows: "We have come almost to the limit of what can be done by the state and the municipalities in the way of promoting the health of the people. There are two great fields left open—medical research and the personal factor. We have formed this association with the object of encouraging people to take a greater interest in their personal health. We endeavor to emphasize that mental, moral and physical health are matters of vital individual concern. We do our best to promote education in the value of food and the need of such things as pure air, pure food, sunlight, rest and suitable recreation. We have started a series of lunch-hour talks outside the factories."

The Flying Physician

The immense distances of the interior of the sparsely populated regions of Australia offer a peculiarly difficult problem of medical aid. A missionary society, the Australian Inland Mission, has for many years undertaken medical as well as religious work here. The so-called Barkly tableland in northwest Queensland is well served by the Queensland Ambulance Transport Brigade. The difficulty of the enormous distances between the centers has been reduced by the introduction of wireless telephony. Arrangements have now been made with the Queensland and Northern Territory Aerial Service to enable the mission to supplement its transport by an air medical service. The mission has accepted the services of Dr. K. S. V. Welch of Sydney to organize an aerial medical service in the tableland district for twelve months. A pilot and an airplane will be stationed at Cloncurry. It is expected that at least 25,000 miles will be covered during the first year. Medical aid will be brought to persons living as much as 400 miles from the nearest physician. A sense of security will thus be given to settlers who have lived under the anxiety of what might happen. The federal government and certain large commercial undertakings have given the scheme generous support. If the experiment proves a success, still wider areas will be covered.

Conference on Rheumatic Diseases

A conference on rheumatic diseases has been held at Bath under the presidency of Sir George Newman, chief medical officer of the ministry of health. Though no important additions to science were made, the conference achieved its object of surveying the present position with regard to a group of maladies that cause an immense amount of invalidity. In his presidential address, Sir George Newman said that the object was to consider the campaign for the conquest or control of rheumatism. The urgency of this matter was manifest from the advance of knowledge of the heterogeneous group of joint diseases and from the data furnished for the first time by the school medical service and the health insurance system. The disease was a drag on industry and a source of heavy financial loss to the state. The main difficulties were three: (1) The relation of the varied forms of rheumatism to one another and their distribution in the world generally or in this country cannot be exactly defined; (2) the *causa causans* is not known with certainty; (3) there is not accord as to the best means of treatment.

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Sir Walter S. Kinnear, controller of health and pension insurance, gave some startling figures. One sixth of the total period for which sickness and disablement benefit was paid to men (one seventh to women) was due to rheumatic diseases. In 1927 such total benefit in Great Britain amounted to $100,000,000, representing 34,000,000 weeks' incapacity. Of this the incapacity due to rheumatism amounted to 5,500,000 weeks, with a disbursement of $25,000,000. To this must be added loss of wages amounting to $60,000,000.

INFLUENCE OF ENVIRONMENT

Dr. Reginald Miller, honorary secretary of the British Medical Association Subcommittee on Rheumatism and Heart Disease in Children, said that juvenile rheumatism was massed among the children of the poor. It was not due to case to case infection but seemed to be an environmental disease. So close was the relation with tonsillar disease that it appeared that the environmental factors must to some extent work by producing infected tonsils. There was a particular connection with damp dwellings.

THE CAUSATION

Sir Humphry Rolleston said that the term "rheumatic diseases" was convenient, if umbrella-like, as it included those acute and chronic infections, rheumatic fever and the rheumatoid groups. At one end of the scale was acute rheumatic fever, remarkably amenable to salicylates; at the other end was osteoarthritis, largely if not entirely a degenerative disease and not responding to salicylates. Between these two was a train of gradual transitions. The characteristic lesion of rheumatic fever was the formation of nodules, large in the subcutaneous tissues, submiliary in the heart. Subcutaneous nodules had often been found in rheumatoid arthritis and osteoarthritis, but nodules had not been found in the heart. Fibrositis, the nonarthritic form of chronic rheumatism, was also accompanied by nodule formation. The streptococcal causation of acute rheumatism had steadily gained ground. It might be argued that the various members of the family of rheumatic diseases were streptococcal in origin and that their clinical differences depended on variations in the seed "and inborn or acquired differences in the soil," namely, the constitutional, metabolic and endocrine factors.

PREVENTION

Dr. R. L. J. Llewellyn insisted on maintenance of the functional efficiency of the skin, which was best achieved by hydrotherapy with alternating applications of hot and cold water to the skin surface. "Our climate will not adapt itself to us and we must therefore adapt ourselves to it. Our people need hardening, not coddling." A national cult of skin hygiene and hydrotherapy should be initiated.

TREATMENT OF ACUTE RHEUMATISM IN CHILDHOOD

Dr. F. J. Poynton did not believe in sodium salicylate for young children with acute rheumatic carditis. He used neocinchophen. It was never followed by the depression and possible death from coma that might occur if salicylate was pushed.

VACCINES

Sir William Willcox found that the virulent cases of rheumatic fever so common thirty years ago did not now occur to anything like the same extent, which he attributed largely to the development of school hygiene. In chronic rheumatism, vaccines should not be given until after the fullest clinical investigation and the treatment of any foci of infection. They were contraindicated when sensitization to the toxins of infection existed; also if there were associated exophthalmic goiter. They were of value in chronic rheumatism when any gross focus of infection had been removed and the toxic process was being carried on by the chronic infection of a mucous surface with its accompanying glandular tissue. Stock streptococcal vaccines were far inferior to autogenous vaccines.

PARIS

(From Our Regular Correspondent)

May 30, 1928.

Visit of the Members of the Royal Institute of Public Health

A large contingent of members of the Royal Institute of Public Health has been visiting the medical institutions of France. A dinner was given by the institute, under the chairmanship of Sir Henry Lunn, in honor of the medical profession of France. Sir Henry Lunn gave an address, in which he congratulated the government of France on the recent strengthening of its financial system. He emphasized also the brilliant accomplishments of French scientists in the field of scientific medicine. Sir Thomas Oliver, a former student of the Faculté de médecine de Paris, recalled Anglo-French cooperation during the war, and invited the French physicians to come to Dublin this summer. Prof. Léon Bernard welcomed the English visitors in a fitting speech.

Celebration by the Academy of Medicine of the Tercentenary of Harvey

After the Royal College of Physicians celebrated, a few days ago, in London, the tercentenary of Harvey, with ceremonies of an international character, in which France participated, Professor Chauffard having served as the representative of the Academy of Medicine, the latter instituted special ceremonies on its own account. The British ambassador was represented by Mr. Winderam. Two other British personages of note, Sir John Rose Bradford, president of the Royal College of Physicians, and Professor Barcroft of Cambridge, attended the ceremonies. Three addresses were given—by M. Béclère, president of the academy; by M. Chauffard, in the name of the physicians, and by M. Gley, representing the physiologists.

The Bordeaux Congress of Hydrology and Climatology

The Congress of Hydrology and Climatology met recently at Bordeaux. In the papers presented on the first day, Dr. de Cardenal of Argelès and Dr. Dubois of Saujon championed the value of special villages for nervous patients, some located at low and some at high levels (mountain regions). MM. Ménard of Lamalou, Courbin of Bagnères-de-Bigorre and Bernard of Néris advocated suitable mineral baths for patients with organic nervous disease and for nervous patients whose condition is secondary to an organic difficulty. The second day was devoted entirely to the presentation and the discussion of three important papers. Agrégé Professor Creyx established firmly the general lines of the pathogenesis of high blood pressure. M. Berthier of Royat undertook to combat the theory of so-called *hypertension solitaire*, pointing out that the term "essential" as applied to hypertension is only a confession of ignorance in regard to the actual cause or causes (though obscure) of the syndrome. M. Courbin of Bagnères, physician to the hospitals of Bordeaux, after having outlined clearly the various factors affecting blood pressure, showed how the mineral baths act on each, being equally capable of opening up a kidney, of quieting a spasm, and of toning up a myocardium. The paper contained some original curves showing the varying effects of baths and douches on the blood circulation, dependent on the temperature of the water, which is an exceedingly important matter in hydrology. The congress closed with an excursion to the Médoc region, the famous wine-producing section of France, where, after the eulogies that had been poured on mineral waters, the praises of wine were sung; no one was so indiscreet as to mention the diseases that the abuse of alcoholic beverages may cause and the part that they may play in supplying the mineral springs with a clientele of liver, kidney and gout patients.

Two French Physicians Recipients of an American Gift

At the office of M. Fallières, minister of labor, two gold medals, together with a prize of 25,000 francs, offered by Mr. Benjamin Rosenthal to the French physician who, during 1927, should contribute the most valuable scientific researches in the field of tuberculosis, were recently awarded. A commission appointed by the minister of labor, of which Prof. Léon Bernard was chairman, divided the prize between Drs. Nègre and Boquet, heads of laboratories at the Pasteur Institute, and authors of important researches.

A Sanitary Mission for the Promotion of Rural Hygiene

A number of physicians, hygienists and sanitary engineers, at the invitation of the health section of the League of Nations, will soon depart for various countries, and are expected this week in France for the studying of the problems of rural hygiene. The sanitary mission will study, in the department of Seine-Inférieure, the methods employed for the collection of demographic statistics in the rural districts, which have given exceptionally favorable results. In the department of Aisne, it will study the question of providing an adequate water supply in rural districts, and also the problem of dwellings and model villages. The physicians and engineers invited to take part in this mission are citizens of the following countries: Bulgaria, Brazil, Czechoslovakia, Colombia, Denmark, Esthonia, France, Germany, Greece, Guatemala, Italy, Jugoslavia, Panama, Paraguay, Portugal, Roumania, Spain and Russia.

BERLIN

(From Our Regular Correspondent)

May 19, 1928.

The Congress of the German Surgical Society

(Concluded from page 2048)

THE SURGICAL TREATMENT OF MENINGITIS RESULTING FROM TRAUMA AND FROM OTHER INFECTIONS

The second main topic of the Congress of the Deutsche Gesellschaft für Chirurgie, held April 11-14, 1928, was concerned with the surgical treatment of meningitis resulting from trauma or from other infections. Prof. M. Guleke of Jena, who presented the introductory paper on the subject, discussed the anatomic relations of the subarachnoid space, which is by no means a uniform structure but varies in width and presents a number of barriers, not only in the brain but also in the spinal region. There is a flowing current of spinal fluid. It is, however, not rapid or uniform, but is influenced by the pulsatory and respiratory movements; also by head movements. That explains the uneven spread of meningitis. Still other circumstances, such as brain edema and brain prolapse, play a part in the spread of traumatic meningitis. Guleke did not discuss in detail the clinical picture and the symptoms. It is scarcely possible to give a reliable prognosis, since very severe cases often heal spontaneously whereas mild cases end fatally. Even the nature of the various causative agents present does not constitute a basis for a prognosis, although the presence of streptococci makes the prognosis more unfavorable. The mortality from meningitis in basal fractures is still very high. And yet, a word of caution against proceeding too abruptly with a surgical intervention is in order. General management will consist chiefly in rest treatment. The main endeavor will be to remove the primary focus. It is not always easy to meet this demand, especially in the case of extensive fractures. Guleke will not accept the demand of Professor Voss of Frankfort that, as a prophylactic measure, everything must be opened up at once. However, if meningitis has developed and surgical intervention is resorted to, the operation must be done radically. But the intervention may be made more difficult by the fact that between two suppurating foci there may be intact bone and dura mater. Punctures do not always show whether or not pus is present in adjoining areas. If the portal of entry is not established, puncture as applied to the lumbar or suboccipital region is alone to be considered; puncture of the ventricle may be undertaken only in case the foramen is closed. Very often, puncture is followed by immediate improvement, which is to be ascribed, not to the removal of bacilli and toxins but to the abolition of pressure, and, moreover, not merely to the mechanical performance but likewise to the better blood supply thereby effected. But puncture is associated with certain special dangers; a local meningitis may be thus changed into a general condition; or a collapse may occur, fatal hemorrhages, or a breaking through of an abscess. Puncture, therefore, may be carried out only in a recumbent position and with determination of pressure. It is often, however, a benefit, especially when repeated. If it does not suffice, open drainage of the brain, with exposure of the cisterna, and of the spinal cord, with laminectomy of the second and third lumbar vertebrae, may be considered. Guleke opposes lavages with or without antiseptic solutions, since they do not reach all parts and are harmful to the tissues. The use of methenamine he considers of doubtful value, though he intends to give it a further trial. Antistreptococcus serum is said to have given good results in a few cases. In a collected series of 325 cases of meningitis, sixty-one, or 19 per cent, ended in a cure. Guleke thinks that the percentage of mortality is too high. The best way to reduce it is through prophylaxis; in fractures and injuries so much depends on the first treatment of the wound.

Professor Zange of Graz, the second speaker, discussed the subject from the otologic standpoint, on the basis of his twenty years' experience in war and in peace times, together with communications from other clinics. He emphasized that not every increase of pressure in the spinal fluid is synonymous with meningitis. Other changes are necessary, though they cannot always be demonstrated; for instance, above all, increase in cells and protein. Two types of meningitis must be distinguished: suppurative, in which the spinal fluid does not necessarily contain pus but does always contain polynuclear cells, developing sometimes suddenly, and sometimes more insidiously, and serous meningitis as such (not the type that is the preliminary stage of the suppurative variety). The main thing in surgical treatment is the elimination of the primary focus, including the transmission paths, as early and as completely as possible. Zange considered the complications of acute and chronic middle ear suppurations of the middle and of the posterior cranial fossa; also, the mode of infection in skull fracture involving the ear, in which connection he called special attention to the fact that, in the presence of severe disturbances involving the inner ear (loss of hearing, dizziness associated with nystagmus), the cause often lies not in the inner ear but in the region back of the labyrinth. Furthermore, the mode of infection in stab wounds and gunshot injuries of this region, and their location and extent, may vary greatly and may be difficult to determine from examination of the exterior. He likewise discussed the transmission paths in acute and chronic suppurations of the nose and the accessory nasal sinuses, in nose injuries with simultaneous fracture of the base of the skull (late meningitis), and in other infected injuries of this region. He explained also the paths of infection by way of the pharyngeal and the buccal cavities in peritonsillar and lateral phlegmons, or by way of the teeth (thrombosis of the cavernous sinus). Of especial importance for operative intervention is knowledge of the fact that transmission to the interior of the cranium often takes place through intact bony walls by way of perforating vascular canaliculi. Through elimination of the primary focus, 364, or 28 per cent, of a series of 1,282 cases were brought to recovery. Of patients with fully developed meningitis, 24 per cent were cured, and of those with incipient meningitis, 33 per cent. These figures show the value of early diagnosis, which will be based on the clinical symptoms and,

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above all, on the outcome of the spinal fluid test. Zange dealt also with the various operative procedures: the exposure of the semicircular canals, the exposure of the posterior, lateral and anterior fossae and the operations on the nose and its accessory sinuses, and emphasized that the chief thing in the operative intervention is not to overlook any focus but to proceed radically, without scattering the infection further.

On the basis of experiments with immediate narcotization of the central nervous system, which he carried out with insufflation of acetylene or nitrous oxide (or with these gases after passing them through ether), Zeller of Berlin recommended, during the general discussion, a mechanical insufflation of one of these gases into the spinal fluid in the presence of diffuse meningitis.

Brünings of Jena has endeavored to discover means of recognizing meningitis early. He found such a means in induced stasis of the jugular vein. Such stasis causes, in meningitis, a severe headache, though the other symptoms are still lacking, and it is also true that in cases in which a clinical cure has been effected such headache will be elicited when jugular stasis is induced. On that account, Brünings does not think highly of the action of lumbar puncture. He ascribes, however, a marked effect to the wide splitting of the cisterna basalis, since thereby an elimination of the severe brain pressure is brought about, as he has shown by experiments on dogs. He recommends therefore that this intervention be carried out early, but Zange is opposed to the idea.

BELGIUM

(From Our Regular Correspondent)

May 8, 1928.

Convention of Otoneuro-Ophthalmologists and Neurosurgeons

The Groupement belge d'études oto-neuro-ophtalmologiques et neuro-chirurgicales recently held its annual convention in the Palais des Académies. The meeting was well attended. This annual convention is taking on more and more importance and is becoming a veritable congress. The main subject on the program was "position nystagmus." The subject was treated by MM. Buys and Hennebert. Position nystagmus comes on following a mere change in the position of the head. In studying position nystagmus, one must avoid causes of error produced by the movement of the head with relation to the trunk, which elicits the deep reflexes of the neck, and by a sudden change of position that may give rise to nystagmus through displacement of the endolymph. Position nystagmus is characterized by its short duration — from a few seconds to from one to two minutes, its very restricted amplitude, and its horizontal or rotatory movement. It appears after an interval of latency that is usually very short; it appears irregularly and inversion sometimes occurs when the subject resumes his first position. There is a tendency to regard it as of otolithic origin, and, in favor of that assumption, the facts are advanced that it occurs when the head is in a certain definite position and under such conditions that the movement of displacement cannot be invoked as a cause, and that a certain interval of latency must precede the onset of the movement. These two characteristics correspond well with the idea that is entertained in regard to the action of otoliths. On the other hand, it is difficult, on the basis of the otolithic genesis of position nystagmus, to explain the horizontal direction of the movement, its limited duration, and, finally, the inversion phenomenon that is sometimes observed. At present, therefore, it is difficult to take account of the rôle of the otoliths in the mechanism of this nystagmus, and the question may be raised as to whether their rôle is not somewhat indirect. The otolithic excitation caused by the changes in the position of the head might call forth a latent and preexisting nystagmus. Quix stated that, in his opinion, the researches of Magnus and his school do not shed much light on the subject of the causes of position nystagmus. In any event, position nystagmus does not appear, thus far, to be a phenomenon of central origin. For the present, therefore, we must apply ourselves to the study of the peripheral organs.

The Treatment of Delinquent Psychopaths

Before the Société de médecine mentale de Belgique, Dr. Vervaeck discussed recently the question of the treatment to be accorded to delinquent psychopaths. Should they be confined in ordinary psychopathic hospitals or in special institutions having more the character of penitentiaries? He holds that, in spite of the objections that have been made, there is a satisfactory modern method of organizing the care of abnormal criminals without imperiling society, and which will still take account of the responsibility of the medical directors of psychopathic institutions.

The problem of the care and treatment of the delinquent psychopath is extremely complex. It necessitates a coordination of the efforts of magistrates, alienists and societies for social protection. Serious efforts have been put forth, and good results have been secured in Brussels.

When psychopaths have committed misdemeanors or crimes, there are several different assumptions to be considered: 1. The overt acts may not come to the notice of the prosecuting magistrate, but the family of the delinquent may adopt the necessary measures to prevent a repetition of the offense. 2. The misdemeanor becomes the cause for a trial; there is a scientific observation, and some form of treatment has to be instituted. Such action is taken regularly in the case of delinquents who are in comfortable circumstances, but a biologic and psychiatric examination of the accused should be made likewise in cases involving strangers and the indigent. 3. The accused are given their liberty because the misdemeanors are not serious, or they are given a suspended sentence, or the penalty imposed is very light, often as a result of a mental test, which reduces their accountability. They are then placed in the psychiatric annex of the prison or are supervised by a dispensary of mental hygiene. 4. The accused with reduced accountability may be sentenced conditionally. In such cases, a supervision should be required, in order to avoid recidivism and as a protection to society, and the penalties should be rigorously enforced if social adaptation is not forthcoming. 5. If the delinquent psychopath is sentenced, his penalty should not be shortened, but it may be transformed into a sojourn in the medicopsychiatric section of the prison. Since 1920, the abnormal and weakly prisoners receiving sentences are given a mental examination, as a routine. Those whom it is necessary to subject to a prolonged anthropologic examination are sent to one of the psychiatric annexes (Brussels, Antwerp, Ghent, Louvain). After the diagnosis is made, the physician gives the directions for treatment, which is carried out in the patient's cell, if that is possible, or under the supervision of a specialist, if the case requires it. The weakly and the epileptic are sent to a special institution. On the expiration of their sentence, they are liberated, but at first conditionally. If it is necessary to place them under control, they are brought under the supervision of some society that specializes in the work of social readaptation. If their antisocial tendencies persist, they are placed in an asylum.

The Maimed and the Crippled

Dr. Dam, director, recently gave before the Société belge d'orthopédie an historical account of the Institut pour estropiés (cripples) in Brabant. The institute, founded in 1912, was intended, originally, for the reeducation of persons injured by industrial accidents. According to statistics that have appeared in Germany, with which Dr. Dam's observations are in agreement, 80 per cent of the cripples were such congenitally or became so during their childhood; that is, before they became

14 years of age. Welfare work for cripples must be begun, therefore, in childhood, for which reason the scope of the institute was enlarged. The task imposed on the institute is great. There are in Belgium 36,000 cripples (exclusive of war cripples), 12,000 of whom must be aided by charitable institutions.

While the creation of the Institut pour estropiés marks a distinct and enormous advance, there is still much to be done, particularly as regards education. All the children under treatment in the clinics and hospitals for lesions that may render them crippled must be educated in a special institute.

Dr. Dam gave also his personal views with regard to prosthesis apparatus for the maimed and the crippled. Those who have lost their upper limbs, or at least the use of them, constitute the most serious problem, for it is much easier to find work for those who are bereft of their lower limbs (or of the use of them). In children, and even in adults, prosthetic apparatus should be relied on as little as possible, for such apparatus, no matter how well made it is, can never take the place of absent members.

Cancer of the Breast

Before the Academy of Medicine, M. Robert Danis recounted recently the results of his operations on patients with cancer of the breast. His technic consists in the resection of the mammary skin, that covering the border of the pectoralis major and that of the axilla, which resection is followed by that of the two pectoral muscles and the anterior margin of the serratus, at a single sitting and without separating the layers, together with the massive contents of the axilla, the subclavian depression, and the subomohyoid space. His results were as follows: 90 per cent of survivals during the first year; 85 per cent (thirty-four cases) of survivals during the second year; 73 per cent (twenty-two cases) of survivals during the third year; 70 per cent (twenty cases) of survivals during the fourth year, 75 per cent of survivals during the fifth year; 75 per cent (four cases) of survivals of patients operated on more than five years ago.

Congress of Gynecology and Obstetrics

The Brussels Congress of the Société belge de gynécologie et obstétrique, to be held in 1929, has selected the following topics for special consideration: (1) genital adenomyomas; spontaneous and experimental endometriomas; (2) the pituitary body in relation to the female reproductive organs; (3) forceps at the superior strait, and (4) uterine hemorrhages aside from those of pregnancy: their mechanism and their treatment.

Marriages

JOHN CAMPBELL MEAKINS, Montreal, Que., Canada, to Mrs. Lawrence A. Young of Chicago, at New York, June 28.

JAMES MAX MARSHALL, Rochester, Minn., to Miss Mary Elizabeth Yancey of Rio de Janeiro, Brazil, April 13.

CHARLES L. BROWN, Boston, to Miss Ruth MacAllister Jamieson of Lowell, Mass., June 9.

CHARLES G. STOLL, Washington, Ind., to Miss Isabelle May Bennett of Fort Atkinson, Wis., June 21.

LLOYD G. LELAND, Newton Falls, Ohio, to Mrs. Jessie Gillespie of Warren, June 1.

LOUIS D. COTRURO to Miss Emma C. Schiappacasse, both of Detroit, June 20.

SIGMUND S. TASHMA, Zeigler, Ill., to Miss Jane Levin of St. Louis, June 23.

HOMER A. DAVIS to Miss Apolonia Thomas, both of Amidon, N. D., in May.

JULIUS ADLER to Miss Celia Mildred Keener, both of Chicago, June 3.

MILTON H. CARRIG to Miss Louise Kerz, both of Chicago, May 24.

Deaths

Presley Marion Rixey ⊕ Rear Admiral, U. S. Navy, retired, Rosslyn, Va.; University of Virginia Department of Medicine, Charlottesville, 1873; entered the navy as an assistant surgeon in 1874; passed through the various grades to that of rear admiral in 1902, when he was appointed surgeon general; was retired in 1910; served as the official physician to Presidents McKinley and Roosevelt; served during the World War as inspector general in the United States of medical activities in the navy, and with the Council of National Defense; aged 75; died, June 17, of myocarditis.

Frank Ahon Morrison ⊕ Indianapolis; Medical College of Indiana, Indianapolis, 1880; for many years professor of ophthalmology, Indiana University School of Medicine; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly member and president of the city board of health and board of education; on the staffs of the James Whitcomb Riley, Robert W. Long and St. Vincent's hospitals; aged 68; died, June 7, of cerebral hemorrhage.

Philip Fletcher Rogers, Milwaukee; Northwestern University Medical School, Chicago, 1897; member of the State Medical Society of Wisconsin; past president of the Milwaukee County Medical Society; served during the World War; on the staffs of the Milwaukee Emergency, Mount Sinai and Columbia hospitals; aged 57; died, June 20, of cerebral hemorrhage.

Edward Lawrence Chambliss, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1894; past president of the Jackson County Medical Society; formerly connected with the department of internal medicine, University of Kansas School of Medicine; aged 57; on the staff of St. Joseph's Hospital, where he died, May 19, of pneumonia.

Herbert Stanton Steuer, Cleveland; Western Reserve University School of Medicine, Cleveland, 1921; member of the Ohio State Medical Association; demonstrator of anatomy at his alma mater; aged 31; on the staff of Mount Sinai Hospital, where he died, June 7, as the result of being accidentally electrocuted by a roentgen-ray machine.

Ansel Irwin Miller ⊕ Brattleboro, Vt.; Medical Department of Columbia College, New York, 1884; past president of the Windham County Medical Society; formerly member of the school board; on the staff of the Brattleboro Memorial Hospital; aged 70; died, June 15, of heart disease and nephritis, following pneumonia.

Jean Jacques Abram Van Kaathoven, Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1902; formerly professor of clinical surgery, College of Medical Evangelists; served during the World War; aged 50; died, in June, of chronic pancreatitis, diabetes mellitus and bronchopneumonia.

Arthur Walker Bingham ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1900; formerly demonstrator of physiology and assistant in pediatrics at his alma mater; on the staff and president of the medical board of the Willard Parker Hospital; aged 55; died, June 9, of heart disease.

John Melvin Newbern ⊕ Jarvisburg, N. C.; Georgetown University School of Medicine, Washington, D. C., 1898; president and formerly secretary of the Currituck County Medical Society; aged 60; died, April 30, at St. Vincent's Hospital, Norfolk, Va., of chronic nephritis.

George R. Thompson ⊕ St. Joseph, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; proprietor of a sanatorium bearing his name; formerly superintendent of State Hospital number 2; aged 73; died, May 25, at the Missouri Methodist Hospital, of pneumonia.

Owen O'Neill ⊕ Willimantic, Conn.; Jefferson Medical College of Philadelphia, 1904; past president of the Windham County Medical Society; served during the World War; on the staff of St. Joseph's Hospital; aged 46; died, June 4, of complications following erysipelas.

Ernest Willard Powell ⊕ Omaha; Medical Department of Washington University, St. Louis, 1898; aged 52; on the staffs of the Douglas County Hospital and the Evangelical Covenant Hospital, where he died, June 5, of typhoid fever with intestinal perforation and peritonitis.

Charles B. McKinnon, De Funiak Springs, Fla.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; past president and secretary of the Walton

⊕ Indicates "Fellow" of the American Medical Association.

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County Medical Society; aged 62; died, June 8, of cerebral hemorrhage.

Joseph Warren McGill ✠ Rochester, N. Y.; University of Buffalo School of Medicine, 1887; formerly on the staffs of the Rochester General and Park Avenue hospitals; aged 65; died, June 1, of cardiovascular renal disease and coronary occlusion.

Clayton Bond Conwell, Cincinnati; Miami Medical College, Cincinnati, 1901; formerly superintendent of the Ohio State Sanatorium, Mount Vernon; aged 52; died, June 9, of spinal sclerosis and ununited fracture of hip.

Bartlett Jones Witherspoon ✠ Charlotte, N. C.; Medical College of the State of South Carolina, Charleston, 1894; on the staffs of the Presbyterian and St. Peter's hospitals; aged 57; died, June 9, of angina pectoris.

George Hippolyte Juilly ✠ San Francisco; University of California Medical School, San Francisco, 1902; on the staff of the French Hospital; aged 51; died, May 31, at Bartlett Springs, Calif., of angina pectoris.

Robert J. Nestor ✠ Waterloo, Iowa; State University of Iowa College of Medicine, Iowa City, 1890; formerly city health officer; aged 65; died, May 29, in a hospital at Battle Creek, Mich., of cirrhosis of the liver.

Edward Davies, Mansfield, La.; Philadelphia College of Medicine and Surgery, 1856; member of the Louisiana State Medical Society; Confederate veteran; aged 90; died, May 26, of carcinoma of the stomach.

Martha Allen Goinga, Redkey, Ind.; Chicago Homeopathic Medical College, 1881; formerly member of the Redkey board of health; aged 94; died in May, at Cedarville, Ohio, of senility.

Jefferson D. Brummall, Salisbury, Mo.; Missouri Medical College, St. Louis, 1882; member of the Missouri State Medical Association; aged 67; died, May 4, of cerebral hemorrhage.

John Adam Hale, Los Angeles; Beaumont Hospital Medical College, St. Louis, 1888; served during the World War; aged 61; died, May 28, of a self-inflicted bullet wound.

Emily Waterman Wyeth, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1887; aged 77; died, April 15, at Silverwood, Ind., of cerebral hemorrhage.

Harry Ernest Shaver ✠ Boyne City, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1897; aged 49; died, May 15, at the Lockwood Hospital, Petoskey, of myocarditis.

Charles A. May, Maplewood, Mo.; Cleveland Medical College, 1877; aged 76; died, June 14, at the Barnes Hospital, St. Louis, of cholelithiasis and emphysema.

George Wirt Hathaway, Yreka, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; aged 70; died, April 24, of ulcerative colitis.

Mary Winter Fisher, Pagosa Springs, Colo.; Hahnemann Medical College and Hospital, Chicago, 1895; aged 61; died, May 30, of carcinoma of the breast.

John R. Davis, Fort Smith, Ark. (licensed, Arkansas, 1903); also a druggist; aged 60; died, April 5, of edema of the lungs and acute dilatation of the heart.

Edward F. Shaffer, Grayslake, Ill.; Central College of Physicians and Surgeons, Indianapolis, 1889; aged 67; died, June 5, of cerebral hemorrhage.

Ernest Porter Hopper, Marked Tree, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1920; aged 40; died, June 5, of acute myocarditis.

Leander Peter Fernandez, Battle Creek, Mich.; College of Physicians and Surgeons, Baltimore, 1896; aged 57; died, March 24, of myocarditis.

Isaac William Silberman, Brooklyn; Regents of University of State of New York, 1882; aged 79; died, June 14, of carcinoma of the rectum.

S. L. Guild Leggett, Syracuse, N. Y.; Homeopathic Medical College of Missouri, 1888; aged 82; died, May 27, of chronic valvular heart disease.

Charles Crawson Sims ✠ Seminole, Okla.; Fort Worth School of Medicine, 1898; aged 53; died suddenly, May 9, of cerebral hemorrhage.

Frederick H. Aufderheide, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1890; aged 87; died, June 9, of arteriosclerosis.

James T. A. Gaines, Dewyrose, Ga.; Southern Medical College, Atlanta, 1890; aged 59; died, February 28, of softening of the brain.

Joseph A. Deen, Ada, Okla.; Barnes Medical College, St. Louis, 1902; aged 50; died, March 4, of pellagra.

Correspondence

A PRECAUTION IN THE USE OF PROCAINE-EPINEPHRINE FOR REGIONAL ANESTHESIA

To the Editor:—With the extensive amount of surgical work now done under local anesthesia, it is surprising to note how few instances of untoward effects are recorded in medical literature. This is probably due to the care exercised in the preparation of the solutions, such care being the result of the mishaps with the treacherous cocaine formerly used for injection.

It was, however, inevitable that, with the modern tendency to speed up everything, time and labor saving devices would invade the field of peripheral anesthesia, and so ampules and carpules of procaine and epinephrine mixtures ready for immediate use were introduced. These were not objectionable so long as the strength and proportions of the drugs were within the bounds recommended by the specialists in regional anesthesia. In fact, they are a boon for office use in minor surgery.

When one considers the thousands of injections of procaine-epinephrine that are being made every day without untoward results of any kind, I feel that I should ignore a case of sloughing which I am making the basis of this communication lest it discredit regional anesthesia even to the slightest degree.

In the literature of this country only one writer (Ruben, J. A. *Pennsylvania M. J.* **23**:713 [Sept.] 1920) discusses sloughing after local anesthesia, and he takes occasion to recommend heat postoperatively to restore active circulation and prevent sloughing.

Two Italian observers, La Rossa and Riccio (*Paris médical* **57**:341 [Oct. 24] 1925; abstr. THE JOURNAL, Nov. 28, 1925, p. 1762), reported fourteen cases of necrosis of the skin and subcutaneous tissue from their study of the literature and added four cases of their own. They did not cite, however, the strength of epinephrine solutions used but advised against the use of it altogether. This I consider questionable on account of the well known fact that epinephrine, through its vasoconstrictor action, localizes the effect of procaine by preventing absorption, thus reducing its toxicity and at the same time prolonging the anesthesia. It also gives a clean, bloodless field of operation.

R. C., a woman, aged 30, came to my office, January 10, complaining of eight scars 1 cm. in diameter with an elevation of 0.5 cm. on her shoulders, the result of furuncles, treated two years before, which she said prevented her from wearing evening dresses. She requested that I remove one of them at the time and stated that if the cosmetic result was satisfactory she would have the others attended to.

Having run out of carpules of 1 per cent procaine, I used some carpules AA of 2 per cent procaine and proceeded with the operation.

Under field-block, using two carpules (6 cc. of 2 per cent procaine), I excised one of the nodules and then sutured the wound without undercutting any of the skin, as is often necessary in plastic operations. The wound progressed to primary healing, but in several days there was noticed a beginning necrosis of the entire area that had been blocked off with the local anesthetic. This necrotic tissue gradually sloughed off until there was left a superficial ulceration which took about six weeks to heal.

I report this so that others may beware of using procaine with so much epinephrine. The carpules are just marked 2 per cent procaine AA, and the circular that goes with the carpules states that the AA carpules are for long anesthesia. At the time I did not realize that they contained $\frac{1}{1:200}$ grain of epinephrine per cubic centimeter. This I learned after writing to the Cook Laboratories.

Dr. Gaston Labat, my one-time preceptor, in his book on Regional Anesthesia, recommends that 15 drops of a 1:1,000 solution be used for each 100 cc. of procaine solution, irrespective of the strength of the solution, to prevent sloughing. This amount is half as much epinephrine as is found in A carpule, the weakest in epinephrine put up by the Cook Laboratories, and a fifth as much as in the ones I used on my patient.

FRANK J. SERAFIN, M.D., New York.

CONGENITAL WORD BLINDNESS

To the Editor:—In your issue of April 7, p. 1095, Dr. Orton sets out an ingenious theory of congenital word blindness which is possible only to one who has not seen a number of well marked cases.

Orton's examples are children who do not learn reading well in school and have retarded development of dextrality. They are common and well known types, but different from the marked cases of congenital aphasia showing wordblindness. This last, of course, exists in all degrees in different cases. They usually handle arabic symbols and logograms well. It is to be remembered that there are other varieties of well marked aphasias in which wordblindness does not exist.

Congenital aphasia was first set out in the Ingleby Lectures at the University of Birmingham in 1905, and the subject fully gone over historically in *School Hygiene*, November, 1918. It is also dealt with in a form likely to be more accessible to American readers in three chapters in my recent book "The Fundamentals of School Health."

JAMES KERR, Edinburgh.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS ON BODY OF "LEAD" FROM INDELIBLE PENCILS

To the Editor:—Would you please tell me the chemical composition of the lead used in indelible pencils, its toxic action on the body and treatment?

B. E. MCGOVERN, M.D., Colorado Springs, Colo.

ANSWER.—The indelibility of pencil markings usually comes from the presence of an aniline dye in the "lead." Pencils containing methyl violet are the most popular, although those containing blue and red aniline pigments are produced in large numbers.

The "lead" of indelible pencils found in common use at this time is composed of graphite, kaolin and the aniline dyestuff. A typical analysis indicates methyl violet, 50 per cent; graphite, 37.5 per cent; kaolin clay, 12.5 per cent.

In the manufacture of these pencils it is necessary to use some binder, such as linseed oil or cottonseed oil. Later this plastic mixture, after forming into round "leads," is baked. The degree of hardness of a pencil depends on the extent of baking.

The user of indelible pencils runs some risk of harm. In sharpening an indelible pencil, small fragments are occasionally thrown into the eye.

Henry Milch, in an article entitled "Indelible Ink-Pencil Injuries" (*Am. Surg.* **87**:95 [Jan.] 1928), writes:

> In cases examined as early as one hour after the injury, very little is seen beyond slight irritative reactions and a tendency to hemorrhage but no necrosis. In cases observed after the lapse of twenty-four hours, there is definite evidence of necrosis of surrounding tissues. The necrosis is completely aseptic and neither leukocytes nor bacteria are found in the area bathed by the lethal fluid. As a consequence, the definite processes of repair are held in abeyance until the whole necrotic mass has been extruded after its separation at the line of demarcation. Clinically, there are two types of reaction to the sort of chemical injury induced by indelible-ink pencils. In the type characterized by the appearance of only local symptoms, there is usually nothing more to be seen than a small punctured wound. The wound and the surrounding tissues are highly discolored, and from the mouth of the wound there issues a moderate amount of dye-stained serous fluid. There is no evidence of inflammatory reaction and, beyond a slight feeling of discomfort, the patient seldom complains of pain. This is doubtless due to the fact that the nerve endings are involved in the same necrotic process as the other neighboring tissues, and, secondly, to the fact that in the absence of inflammatory reactions there is no increase in the tissue tension. Methyl violet seems to be most common in the production of this type of reaction. In the development of the general type of reaction, methyl blue appears to be even more potent. The patient presents the appearance described above, and in addition usually complains of headache, fatigue, slight rise in temperature and general malaise. The latter symptoms can only be attributed to a general toxic effect resulting from absorption and distribution of the dye by the lymphatic system. Left untreated, the affection is extremely chronic and shows no tendency toward healing until the extrusion en masse of the necrotic tissues. In cases treated shortly after injury, Glass has shown that incision, curettage and lavage of the wound with a 1 per cent solution of trypan flavine is frequently sufficient to result in healing. On the other hand, in cases treated at a relatively late stage, wide excision and even amputation is often necessary to bring about cure. The attempt to remove the offending particles of dyestuff through the small puncture hole by the use of forceps is of all means the worst that can be employed. The result usually is that the foreign body is broken in many smaller fragments, the protective wall is injured and the tissue spaces opened for the wider and more rapid diffusion and absorption of the injurious solution. That a wound caused by an indelible pencil may heal under a strictly conservative form of treatment is shown by the case reported above. But, while this may occur occasionally, the risks involved far outweigh the benefits which may attend such a course. It is felt that the only rational form of therapy, the one which involves radical procedure with the purpose of conservation of tissue and function, lies in the wide excision of the wound and its contained foreign body at the earliest possible moment.

In Gartenmeister's case (Ein Fall von Tintenstiftverletzung, *Zentralbl. f. Chir.* **53**:1687 [July 3] 1926) the immediate general symptoms were merely loss of appetite and energy. Improvement followed. The splinters had been incompletely removed from the hand and five weeks after the injury gastro-intestinal catarrh (diarrhea) set in, followed by icterus, which lasted two weeks. Three and one-half months after the injury, pain and swelling in the hand returned; the temperature rose to 38.4 C. Operative removal, as complete as possible, with scraping of surrounding tissues, was now done, and was followed by severe pain in the hand, swelling of axillary glands, shivering, chattering of teeth, and temperature rise to 39 C. There was albumin in the urine. These symptoms lasted a day or two. Recovery took place. Gartenmeister mentions that Torraca, in animal experiments, found severe injury to the tissue of the liver. Feilchenfeld (Tintenstiftverletzinger des Auges, *Deutsche med. Wchnschr.* **52**:2124 [Dec. 10] 1926) says, writing on the eye, that the necrosis rapidly involves the deeper tissues and may result in perforation of the cornea, with iritis, iridocyclitis, etc. The cause of this destruction is the aniline dye, the methyl violet.

Makers of indelible pencils may be exposed to a variety of occupational disease hazards, such as (*a*) the presence of acrolein, which is formed on the heating of oils in the baking process; acrolein is a skin, mucous membrane and respiratory irritant; (*b*) the glue employed in fixing the two halves of the wooden portion of the pencil may produce low-grade skin disease; (*c*) the aniline dyes employed in indelible pencils, in themselves, are not entirely harmless, and in their manufacture the intermediate products are capable of harmful action. Since these dyes are infrequently produced as a part of the pencil manufacture, this hazard is remote. In the painting of pencils, lead (Pb) is usually omitted. Some of the solvents are, however, capable of harm. The solvents are in the same group to which all painters may be exposed, and include turpentine, benzene and linseed oil, etc.

Prompt, well directed treatment is highly important.

See also:

Szokolik, E.: Injury to Cornea by Indelible Pencil, *Am. J. Ophth.* **10**: 515 (July) 1927.

ESCULIN—LIGATION OF VAS DEFERENS

To the Editor:—1. In THE JOURNAL, January 21, page 161, there is a reference to Esculin. Could you refer me to a source of supply? I have been unable to obtain any through my regular dealers. 2. In THE JOURNAL, February 18, page 527, Colston recommends ligation of the vas by a stitch taken through the skin of the scrotum. Does this produce merely a temporary occlusion, through a localized inflammatory reaction, with later reestablishment of the lumen, or is there a permanent occlusion of the vas? Please omit my name.

M.D., Hawaii.

ANSWER.—1. The article "The Penetration of Ultraviolet Rays into Live Animal Tissues," by Drs. Macht, Anderson and Bell (THE JOURNAL, January 21, p. 161) concerns work carried out in the laboratory of Hynson, Westcott and Dunning. Most probably Hynson, Westcott and Dunning, Baltimore, can supply esculin. According to Modern Materia Medica, edition, 2, 1911, esculin is marketed by Merck and Company. However, the catalogue of Merck and Company, Inc., Rahway, N. J., does not list esculin, nor do we find it in catalogues of other manufacturers of drugs.

2. The question concerning Doctor Colston's article was referred to Doctor Colston who replies:

"It is my impression that the ligation of the vas by a stitch taken through the skin of the scrotum produces merely a temporary occlusion through a localized inflammatory reaction.

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"Certainly, in many cases there is a later reestablishment of the lumen, but in some cases there must be also a permanent occlusion. There are no statistics available to show what percentage remain perfectly occluded. However, I have seen several cases like the following, which I will briefly cite, and which seem to me to prove that the lumen became patent after the inflammatory reactions have disappeared.

"A patient on whom a perineal prostatectomy had been done eight months previously, and who had a prophylactic double vas ligation, was seen at intervals of a month after the operation. He was entirely free from symptoms, though the urine remained quite heavily infected. About nine months after operation an acute right epididymitis came on, which cleared up under the usual local measures.

"A more sure proof, of course, would be the presence of spermatozoa in the bacillus secretion, but I am sorry to say that we have no data on this subject."

DISTILLED WATER FOR INJECTIONS OF ARSPHENAMINE

To the Editor:—Is there any harm in the use of so-called double distilled water obtained in ampules from drug companies in making up neoarsphenamine solutions for intravenous injections? Is freshly distilled water necessary? Please omit name.

M.D., Nebraska.

ANSWER.—There is no harm from double or triple distilled water obtained in ampules from drug companies, provided dissolved sodium silicate or other impurities from the glass are absent and, of course, that it is sterile. Some firms in the past have not been careful about this. Most of the drug companies now supply the water in 10 cc. and 20 cc. ampules of relatively nonsoluble glass. It was formerly thought that the double or triple distilled water had to be fresh, but in properly prepared ampules it keeps indefinitely for use in dissolving neoarsphenamine solutions.

DIPHTHERIA TOXOID FOR PREVENTION OF DIPHTHERIA

To the Editor:—Please tell me the value of toxoid and its advantages over sheep serum and horse serum for the prevention of diphtheria. Where can I obtain toxoid? Please omit name and address.

M.D., New Jersey.

ANSWER.—In the hands of Ramon and his co-workers in Paris, diphtheria toxoid has given satisfactory results in the prevention of diphtheria. According to reports it is being used on a large scale in France. See also item under Canada News, THE JOURNAL, April 28, p. 1387. The obvious advantage of diphtheria toxoid over antitoxic serum is that toxoid does not contain any protein of any foreign animal species. The H. K. Mulford Company is supplying the product and has submitted it to the Council on Pharmacy and Chemistry.

METHOD OF TREATING SCARS OF ACNE

To the Editor:—Can you give me a method of removing scars or peeling the skin from the face? I have a young woman under treatment for acne. She is now practically well, but her face is badly scarred and she insists that I attempt to remove them.

CARUS PLUMLEE, M.D., Roy, N. M.

ANSWER.—A detailed answer to this question can be found in THE JOURNAL, July 31, 1920, page 335.

Satisfactory results can be obtained by cautious applications of aqueous solutions of trichloracetic acid, in strengths of from 10 to 50 per cent. The hollow pits of the crateriform scars are first coated with liquid petrolatum. The edge is then touched with the 50 per cent solution, the weaker solutions being employed in the outer areas of the zone, gradually shading off peripherally. Thin brown adherent scabs form, which drop off spontaneously in about ten days. A week or two should elapse before the second application. Patience, perseverance and caution are requisite.

POSSIBLE USE OF LIVER FEEDING IN PELLAGRA

To the Editor:—Will you please inform me if liver feeding is being used successfully in the treatment of pellagra? This disease, of which I have a case now, is so like pernicious anemia in its onset that one would certainly expect a similar treatment in the two diseases.

M.D., California.

ANSWER.—Since it has been shown that fresh lean beef contains the pellagra-preventive essential, vitamin P-P, (Goldberger, Wheeler, Lillie and Rogers: *Pub. Health Rep.* **41**:297 [Feb. 19] 1926), and since such internal organs as the liver are, in general, richer in vitamins than the skeletal muscles, it may reasonably be inferred that liver contains the pellagra preventive and, probably, in relatively large amount. Liver may therefore be used as a form of "meat" in the treatment of pellagra with reasonable expectation that it will prove as efficient as lean beef, if not more so. W. Mollow, recently, has reported two cases of long standing pellagra. The blood picture in these cases resembled that of pernicious anemia. Mollow's suggestion is that both diseases may be the result of intestinal intoxication, the toxins sometimes attacking the nervous and sometimes the hematopoietic system. One of the patients was given liver diet with excellent results. The complete reference to the article is as follows:

Mollow, W.: Ueber Beziehungen der Pellagra zur perniziösen Anämie, *Arch. f. Schiffs- u. Tropen-Hyg.* **32**:250 (May) 1928.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chm., Dr. S. W. Welch, 519 Dexter Ave., Montgomery.

CALIFORNIA: San Francisco, July 9. Sec., Dr. Chas. B. Pinkham, 928 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, July 10-11. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Sec., Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 10. Sec., Dr. E. C. Copeland, Suite 110, 1801 Eye St., Washington.

HAWAII: Honolulu, July 9-12. Sec., Dr. James A. Morgan, Honolulu.

MASSACHUSETTS: Boston, July 10-12. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MISSOURI: St. Louis, July 17-19. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Dir., M. C. D. Koch, Harrisburg.

SOUTH DAKOTA: Mitchell, July 17. Sec., Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: Seattle, July 16. Dir., Reg. Bd., Mr. Charles Maybury, Olympia. Basic Science Bd., July 12. Dir., Mr. Charles Maybury, Olympia.

WEST VIRGINIA: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

West Virginia February Examination

Dr. W. T. Henshaw, secretary of the West Virginia Public Health Council, reports the oral, written and practical examination held at Charleston, Feb. 8-10, 1928. The examination covered 11 subjects. An average of 80 per cent was required to pass. One candidate was examined, who passed. Five physicians were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Howard University School of Medicine	(1927)	82

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Loyola University School of Medicine	(1926)	Illinois
Western Reserve University School of Medicine	(1923)	Ohio
University of Pittsburgh School of Medicine	(1911)	Penna.
Medical College of the State of South Carolina	(1926)	S. Carolina
Medical College of Virginia	(1922)	Virginia

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, April 3-5, 1928. The examination covered 5 subjects and included 50 questions. An average of 75 per cent was required to pass. Three candidates were examined, all of whom passed. Seven physicians were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
College of Medical Evangelists	(1927)*	82.9
Jefferson Medical College of Philadelphia	(1925)	85.6
University of Pittsburgh School of Medicine	(1926)	86.2

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Yale University of Medicine	(1925)	Kansas
Chicago College of Medicine and Surgery	(1913)	Iowa
Northwestern University Medical School	(1921)	Minnesota
Rush Medical College	(1925)	Minnesota
Kansas Medical College, Topeka	(1909)	Kansas
University of Kansas School of Medicine	(1907)	Kansas
University of Minnesota Medical School	(1927)	Minnesota

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.

Book Notices

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By Joseph B. De Lee, A.M., M.D., Professor of Obstetrics at the Northwestern University Medical School. Fifth edition. Cloth. Price, $12 net. Pp. 1140, with 1128 illustrations. Philadelphia: W. B. Saunders Company, 1928.

The last previous revision of this textbook appeared in 1924. As might have been expected, the great difficulty of the present revision has been to take into account the new investigations that have been made, and at the same time to keep the work within the scope of a single volume. The author points out in his preface that many chapters have been completely rewritten and many new illustrations have been added. Dr. De Lee is convinced that the low, or cervical, cesarean section will reduce the mortality and morbidity of abdominal delivery 50 per cent by replacing the classic cesarean. Therefore, special attention has been given to this subject, which is illustrated with many excellent pictures. Dr. De Lee also points out that the whole tendency of the work is conservative and that it is written not for the exceptional performer in the field of obstetric surgery and technic but for the student and the general practitioner. He deprecates as unscientific the tendency of many practitioners to fail to determine previous to the onset of labor the possibilities in the individual case of the need of emergency procedures, should difficulties arise. Such hit or miss systems of practice are unworthy of the name of science. The volume has been printed by the publishers on a better quality of paper, and the illustrations are not only profuse but also almost living in their vividness. The book is a monumental achievement both for its author and for its publisher.

FOOD AND HEALTH. An Introduction to the Study of Diet. By A. Barbara Callow. Cloth. Price, $1. Pp. 96, with 9 illustrations. London: Oxford University Press, 1928.

Here is another brief manual suitable for the physician, the nurse or the public, giving the fundamental facts relative to foods in relation to diet. The volume has more of an appeal for a British reader than for an American. A few of the didactic statements in the book are susceptible of argument if not of negation. One has to do with the lack of any necessity for prepared vitamin substances, if a variety of fresh natural foods can be obtained. How many of our public actually do take a variety of fresh natural foods? Several of the diets include two or three glasses of sherry or Madeira. This is one of the points that make the book more suitable to a British audience.

ASSOCIATION FOR RESEARCH IN NERVOUS & MENTAL DISEASE. A Series of Research Publications. Volume V. Schizophrenia (Dementia Praecox). Edited by Charles L. Dana, Thomas K. Davis, Smith Ely Jelliffe, Henry Alsop Riley, Frederick Tilney, and Walter Timme. Cloth. Price, $7.50 net. Pp. 491, with 61 illustrations. New York: Paul B. Hoeber, 1928.

This volume incorporates the transactions of the fifth meeting of the Association for Research in Nervous and Mental Disease. The entire session of 1925 was devoted to dementia praecox. The volume is divided into nine sections which take up every possible phase of the subject, each of the authors presenting not only his own views but also the literature and current conceptions. The book is well illustrated with charts and diagrams and with portraits of Kraepelin and Bleuler. The book constitutes, therefore, work of the greatest importance not only for all those interested in the clinical character of this condition but also for those concerned with investigations into the causes and the pathology of these mysterious mental conditions.

FILTERABLE VIRUSES. Edited by Thomas M. Rivers. Cloth. Price, $7.50. Pp. 428, with illustrations. Baltimore: Williams & Wilkins Company, 1928.

In this composite volume, ten authorities who have given special attention to the relationship of the filtrable viruses to disease discuss not only the general subject but also the special aspects that have concerned them in their researches. Thus, at least one-half the articles are concerned with methods of study and the remainder with the virus diseases as they affect man and mammals, fowls, insects, plants and bacteria. Few persons, indeed, even few physicians, realize the remarkable number of conditions that have already been placed by investigators in the filtrable virus group. They vary from the bacteriophage to measles, influenza, smallpox and the common cold. The immunologic questions raised are as varied as the conditions concerned. Because of the nature of the viruses, they seem to bear a much closer relationship to the human cell than do the larger parasitic organisms. Following his introductory article Dr. Rivers provides a bibliography of 539 references to the periodical literature on the subject, and the other authors in the series submit equally complete literary references. The book is fundamental in its presentation of the available material. It is useful not only to the bacteriologist but also to every general reader who wishes to keep himself abreast of this phase of modern medical research.

THE SIMPLE GOITRES. By Robert McCarrison, C.I.E., M.D., D.Sc., Associate Fellow of the College of Physicians, Philadelphia. Cloth. Price, $4. Pp. 106, with 143 illustrations. New York: William Wood & Company, 1928.

This book is an amplified form of the subject matter reported to the International Conference on Goiter held in Bern in August, 1927, and is arranged in two parts. Part I deals with the types of simple goiter and part II consists of 143 illustrations.

In Part I three clinical groups of simple goiter are recognized: (1) parenchymatous or chronic hypertrophic goiter, (2) diffuse colloid goiter, and (3) lymphadenoid goiter, depending on the dominant morphologic appearance of the thyroid. The author considers the parenchymatous form as representing the classic type of endemic goiter seen in the severest goiter districts of the world (Alps and Himalaya) and the diffuse colloid as occurring sporadically throughout the world and in mildly goitrous districts. While this statement is in general true, it is more in line with all the facts to believe that the parenchymatous or hyperplastic type of goiter together with cretinism is more common in the severe goiter districts because the degree of thyroid insufficiency is greater, and the diffuse colloid type is more common in the sporadic cases or in mild goitrous districts because the degree of thyroid insufficiency is less, than to believe that these two morphologic types represent two distinct clinical entities. Lymphadenoid goiter, is characterized by varying degrees of hyperplasia, fibrosis and lymphoid infiltration. Clinically in human goiter this change is most frequently seen in patients with exophthalmic goiter and in particular in those who have been treated with large amounts of iodine. McCarrison has been able to produce this lymphoid infiltration of rats' thyroids together with a moderate enlargement of the gland on diets deficient in vitamins A, B and C and independent of the iodine intake. The evidence that lymphoid infiltration of the thyroid indicates a special type of thyroid disease is very meager, while the evidence that the thyroid infiltration depends on factors independent of thyroid is much greater. The well known fact that all parenchymatous goiters may be readily converted into diffuse colloid goiter is not emphasized, although the statement that diffuse colloid goiters are more frequent in early life and adenomatous goiters in later life is stressed as further evidence of different types of goiter. It would be safer to conclude that adenomatous goiter is more common in later life because it usually begins to develop in adolescent goiter.

The statement that "it can hardly be doubted that these differences in the architecture of endemic goiters are due to differences in altitude, soil composition, hardness of drinking water, bacteriological purity of water supplies, social and personal hygiene and, above all, to differences in the quality and composition of the food supply" is a comprehensive general summary of the present-day views regarding the etiology of goiter; but how such factors present in varying numbers and in varying degrees, operating at all ages, could produce three distinct clinical or three distinct morphologic types of goiter, rather than all stages of a single type or cycle, is difficult to understand.

As regards etiology, the author believes that "a judicious blend of the iodine deficiency theory and the infection or toxin theory" is necessary, but holds that the ultimate cause of endemic goiter is a positive toxic agent derived from gastro-intestinal infections since intestinal antiseptics, vaccines, and purifying and sterilizing the water supply have resulted in cure and prevention. The author discusses the "iodine deficiency theory" as

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implying that an insufficiency of iodine is the essential cause of goiter, whereas what is usually meant is that a relative or absolute deficiency of iodine is the *immediate* cause of thyroid enlargement with most of the factors concerned in bringing about this iodine insufficiency, i. e., the fundamental cause or causes, still unknown.

Part II consists of 143 graphs and photographs. The photographs are excellent. They illustrate the various types of cretinism seen in northern India and the production and cure of simple goiter in man, birds, rats and goats. The photomicrographs show the various types (stages?) of goiter in all these animals. All the illustrations are accompanied by brief clear descriptions. The book is written in McCarrison's clear and easy style and is valuable especially to students of the goiter problem.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus, und P. Uhlenhuth. Lieferung 6, Band II. Aktive Immunisierung und Herstellung von Antigenen. Von Prof. Dr. M. Ficker, etc., etc. Third edition. Paper. Price, 21 marks. Pp. 316, with 21 illustrations. Jena: Gustav Fischer, 1927.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 5, Band III. Serumtherapie der Vergiftungen durch tierische Gifte (Schlangen, Skorpione, Spinnen). Von Prof. Dr. R. Kraus, etc., etc. Third edition. Paper. Price, 14.60 marks. Pp. 192, with 50 illustrations. Jena: Gustav Fischer, 1927.

These two issues of the new Handbuch contain thorough reviews of the literature and interpretative treatments of immunologic and technologic topics. The nature, properties and preparation of antigens and their uses in the manufacture of antibodies, and the properties, purification and standardization of antiserums and antibodies generally are illustrated at length. The chapters on the plant and animal toxins and antitoxins are unusually thorough and comprehensive. The nature and treatment of hay-fever are discussed from the theoretical and practical points of view and represent significant contributions in these fields for the student of the disease.

THE YOUNG MAN AND MEDICINE. By Lewellys F. Barker, M.D., LL.D. Cloth. Price, $2.50. Pp. 202. New York: Macmillan Company, 1928.

This volume is one of a series of twelve books planned to supply the young man who hesitates in the choice of a vocation with material that will aid him in a choice. The books are meant not only to hold up to the prospective worker the ideals of the profession but also to acquaint him with the difficult road that he must travel in beginning his work and the possibilities for either professional or material successes after he is established. One of the difficulties of all books of this type is the fact that they are written by men who have achieved success and who therefore present arguments for entering the work, without presenting just as fully a record of the despairs, the defeats and the difficulties that must be surmounted. Dr. Barker knows his medical profession. He provides a fairly accurate picture of its different phases, and his view inclines toward the view that is had with rose-colored glasses.

PROCEEDINGS OF THE WORLD POPULATION CONFERENCE HELD AT THE SALLE CENTRALE, GENEVA, AUGUST 29TH TO SEPTEMBER 3RD, 1927. Edited by Mrs. Margaret Sanger. Cloth. Pp. 383, with illustrations. London: Edward Arnold & Company, 1927.

From Aug. 29 to Sept. 3, 1927, many of those who view with alarm the increasing population of the world met at Geneva and considered the associated problems. The papers presented, together with the discussions and results of cogitations of the committees, are included in the volume here reviewed. Obviously, there is a great deal to be said on this subject, and no doubt most of it was said in the conference at Geneva. The subject was approached from every possible point of view. On page 245 appears one statement in a discussion by Dr. Leon Bernard of France which is, after all, fundamental. He asked the conference how it was possible to know what conditions would be a hundred years hence. Who can tell of the changes that will take place in the nutritional habits of man, in the diseases that affect him or in his method of living? These are the factors which will modify more and more not only the rate of increase of our population but also the ability of the available soil to support any particular number of living human beings.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

EPILEPSY: Comparative Pathogenesis, Symptoms, Treatment. By L. J. J. Muskens, General Secretary of the International League Against Epilepsy. Foreword by Sir Charles S. Sherrington, O.M., G.B.E., M.D., Wayneflete Professor of Physiology, Oxford. Cloth. Price, $8. Pp. 435, with 55 illustrations. New York: William Wood & Company, 1928.

A summary of current views about the most mysterious of diseases.

THE GLANDS REGULATING PERSONALITY. A Study of the Glands of Internal Secretion in Relation to the Types of Human Nature. By Louis Berman, M.D., Associate in Biological Chemistry, Columbia University. Second edition. Cloth. Price, $3.50. Pp. 341, New York: Macmillan Company, 1928.

A new edition of the book that made glands a favorite after-dinner topic of conversation.

DIE TECHNIK DES ORTHOPÄDISCHEN EINGRIFFS. Eine Operationslehre aus dem Gesamtgebiet der Orthopädie. Von Dr. Philipp J. Erlacher, a. o. Professor für orthopädische Chirurgie an der Universität in Graz. Paper. Price, 44 marks. Pp. 482, with 331 illustrations. Vienna: Julius Springer, 1928.

Brief German textbook of orthopedic methods excellently illustrated.

THE SUNSHINE SCHOOL. By J. Mace Andress, Lecturer on Health Education, Boston University, and Mabel C. Bragg, Assistant Superintendent of Schools, Newton, Massachusetts. Cloth. Price, 72 cents. Pp. 185, with illustrations. Boston: Ginn & Company, 1928.

Handsome little school book to help make handsome little children.

HEREDITY AND CHILD CULTURE. By Henry Dwight Chapin, M.D., Medical Director of the Speedwell Society. With a foreword by Professor Henry Fairfield Osborn. Second edition. Cloth. Price, $2.50. Pp. 278. New York: E. P. Dutton & Company, 1928.

New and revised edition of a justly popular book on child guidance.

THE MISBEHAVIORISTS. Pseudo-Science and the Modern Temper. By Harvey Wickham. Cloth. Price, $3.50. Pp. 294, with illustrations. New York: Lincoln Mac Veagh—The Dial Press, 1928.

An ignorant and superficial estimate of modern psychologists and their psychologies.

FOLKLORE OF THE TEETH. By Leo Kanner, M.D. Cloth. Price, $4. Pp. 316, with illustrations. New York: Macmillan Company, 1928.

Strange notions held by nations about the teeth.

A HANDBOOK OF HISTOLOGY. By A. McL. Watson, M.A., Ph.D., Lecturer on Histology, University of Glasgow. Cloth. Price, $3.75. Pp. 207, with 52 illustrations. New York: William Wood & Company, 1928.

PROCEEDINGS OF THE TWENTY-FOURTH ANNUAL CONVENTION OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY, INCORPORATED. Also Proceedings of Joint Meeting with the American Association of Colleges of Pharmacy, August, 1927. Paper. Pp. 207. Chicago: National Association of Boards of Pharmacy, 1927.

THE MATERIAL AND METHODS OF THE GYNÆCOLOGICAL AND OBSTETRICAL DEPARTMENT IN THE UNIVERSITY OF LIVERPOOL. By W. Blair Bell, B.S., M.D., F.A.C.S., Professor of Gynæcology and Obstetrics, the University. Boards. Price, 2/6. Pp. 61, with 32 illustrations. Manchester: Sherratt & Hughes, 1928.

MUTATIONSTHEORIE DER GESCHWULST-ENTSTEHUNG. Uebergang von Körperzellen in Geschwulstzellen durch Gen-Aenderung. Von Dr. Med. K. H. Bauer, a. o. Professor für Chirurgie an der Universität Göttingen. Paper. Price, 3.90 marks. Pp. 72, with 4 illustrations. Berlin: Julius Springer, 1928.

AN INVESTIGATION OF LYMPHADENOMA WITH RELAPSING PYREXIA. By A. Salusbury MacNalty, M.A., M.D., M.R.C.P. Ministry of Health. Reports on Public Health and Medical Subjects. No. 50. Paper. Price, 1s. 6d. net. Pp. 86, with illustrations. London: His Majesty's Stationery Office, 1928.

ÉTUDES SUR LA FONCTION RESPIRATOIRE AU COURS DE LA TUBERCULOSE PULMONAIRE. Par le Docteur Henri-René Olivier, de la Faculté de médecine de Paris. Paper. Pp. 143, with 10 illustrations. Paris: Le François, 1928.

Medicolegal

Insane Person Held Disabled Within Insurance Policy

(Old Colony Life Ins. Co. v. Julian et al. (Ark.), 299 S. W. R. 366)

The Supreme Court of Arkansas, in affirming a judgment in favor of the defendants, an insured and his mother who was named as beneficiary, says that two policies of life insurance which were dated March 13, 1923, were delivered to the insured, June 11. In the latter part of June, or the early part of July, the insured became insane. In September, 1924, the insurance company filed suit in which it sought to cancel the policies on the grounds that the insured had fraudulently concealed material facts and had accepted delivery of the policies at a time when he was not in good health. But whatever impairment of health there might have been by an attack of influenza in 1918, the insured had apparently fully recovered therefrom in 1923, when he was examined for the insurance, and there was no substantial evidence in the record connecting the disease from which he now suffered with the attack of influenza in 1918. The burden was on the plaintiff to establish the fraud by proving affirmatively the falsity, materiality and bad faith in the representations made by the insured in the application regarding his health. Nor does the court agree with the contention that the disability of the insured did not come within the terms of the policy which provided that the total and permanent disability of the insured therein referred to must be due to bodily injuries or disease, such as to prevent him thereafter from performing any work or conducting any business for compensation or for profit. While it was true that he was strong physically, it was also shown that he was totally and permanently disabled by reason of insanity that amounted almost to imbecility, such as to prevent him from being entrusted with any responsibility. This court therefore holds that he was totally disabled within the meaning of the policy.

Not Required to Submit to a Second Herniotomy

(Indemnity Ins. Co. v. Jones et al. (Texas), 299 S. W. R. 674)

The Court of Civil Appeals of Texas says, in this action brought to set aside an award of the industrial accident board of compensation for injuries sustained by defendant Jones while in the employ of a refining company, that, at the request of the plaintiff, or at least on the advice of its surgeon, the defendant had submitted to a herniotomy. The operation was not successful. On the trial of this cause the plaintiff requested another operation, to which the defendant refused to submit. But on motion the trial court appointed a medical board, under the provisions of article 8306, section 12b, of the revised statutes of Texas of 1925, which board reported:

> There is no disease or condition which would render the operation more than ordinarily unsafe. We find that an operation would remove the trouble and recommend that Mr. Jones submit to an operation at once.

After that report was filed, the trial court received evidence on the advisability of the operation. In answer to special issues, the jury found that "it was not advisable for the defendant to submit to the operation; that the operation would not relieve his disability; and that because of his physical condition the operation would be more than ordinarily unsafe. These findings were supported by the evidence.

Article 8306, section 12b, provides for an operation for hernia, but it provides for only one operation, and when at the plaintiff's request, or with its consent, the defendant submitted to the operation, the provisions of this section were exhausted. It was not the intent of the law that the insurer could continue to experiment on the body of the defendant against his wishes on the expert testimony of physicians, no matter how eminent, that another operation would be successful. The defendant refused to submit to another operation, saying that he was afraid it would kill him. In doing so, he was within his legal rights, and no issue under the quoted article was made against him.

Society Proceedings

COMING MEETINGS

American Hospital Association, San Francisco, August 6-10. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.
Idaho State Medical Association, Yellowstone Park, August 27-29. Dr. J. N. Davis, Kimberly, Secretary.
Montana, Medical Association of, Yellowstone Park, August 27-29. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
Pacific Association of Railway Surgeons, San Francisco, August 24-25. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.
South Dakota State Medical Association, Hot Springs, August 7-9. Dr. John F. D. Cook, Langford, Secretary.
Washington State Medical Association, Seattle, August 27-30. Dr. Curtis H. Thomson, 508 Cobb Building, Seattle, Secretary.
Wyoming State Medical Society, Yellowstone Park, August 27-29. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Third Annual Meeting, held at Washington, D. C., May 1-3, 1928

(Continued from page 2137)

Capillary Circulation of the Heart Valves in Relation to Rheumatic Fever

DRS. J. W. KERR, S. V. METTIER and R. L. MCCALLA, San Francisco: The theory of embolism has been substantiated by Rosenau and other workers. Capillaries in the heart valves associated with smooth muscle fibers have been demonstrated by staining methods. We injected india ink under ordinary pressure into the hearts of pigs and mice, and also into human hearts. In twenty-eight of the latter, 10 showed the presence of capillaries in the valve, with anastomoses, especially rich at the line of closure. A study of human hearts showed early gross lesion (1) of rheumatic endocarditis, and (2) of subacute bacterial endocarditis. In these capillaries were shown extending to the line of closure, persisting to the chorda tendinae, between the sulci, and going to the membranous part of the valve. This may permit embolism or toxic substance to give rise to the perivascular onset typical of endocarditis. Temporary obstruction of the blood flow may produce these lesions. The presence of vegetations may block off the region of the embolism. The vessels are present before the inflammatory process takes place.

Clinical Observations on Rheumatic Fever

DR. C. P. HOWARD, Montreal: My father, Dr. R. P. Howard, contributed to the subject a comprehensive monograph, and I have nothing to add clinically to his investigations. The picture of rheumatic fever that we see in Montreal impresses one with the frequency and severity of the disease. In the Montreal General Hospital, of 5,000 patients admitted to the wards, 226 had rheumatic fever. Both sexes suffer equally, and the age of greatest incidence comprises the second, third and fourth decades. Eighty per cent of the cases occur in the first three months of the winter. The disease is more prevalent among the English Canadians than the French. There are many cases among the Jews. The family history shows the rheumatic cycle present. Sixty-seven per cent of the patients had been admitted for chorea, arthritis and tonsillitis. In half the patients there was an acute onset; in the remainder the onset was insidious. Sixty per cent had arthritis. Fibromyositis was absent. Four cases showed rheumatic nodules. Seventeen per cent showed involvement of the circulatory system, and thirty-one presented pericarditis. Adherent pericardium was present in some cases, but was found only at autopsy. Myocarditis was present in 41 per cent; endocarditis in 68 per cent. The mitral valve was most frequently affected, the aortic next and the tricuspid next. Ninety per cent of the patients had myocardial disease as shown by the electrocardiogram; 80 per cent had fever, but no patient had hyperpyrexia. The anemia was of a mild grade; only one had a red blood count below 3 million. Blood culture was sterile. In one terminal case there was a positive blood culture of *S. viridans*. This was a subacute bacterial endocarditis grafted on an old rheumatic infection. Four patients had arthritis; many had tonsillitis; 14 per cent had pleurisy. Erythema multiforme was seen in thirteen cases, and erythema nodosum in seven; the

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latter was the same form as that seen in pulmonary tuberculosis. Delirium was seen in eight cases, but not in a maniacal form. The urine was normal; one patient had a chronic nephritis, not related to the disease. The hospital stay averaged forty days. The disease causes much disability. Tonsillectomy is sometimes done with benefit; salicylates were given with varying success. Digitalis was given when necessary. There were six apparent cures; seventy patients were improved; ten did not improve, and 15 per cent died.

Gout and Gouty Arthritis

DRS. P. S. HENCH, F. R. VANZANT and RUBEN NOMLAND, Rochester, Minn.: A definite relationship between gout and uric acid is established. About 5,000 cases of rheumatic disease are seen every year at the Mayo Clinic. Gout has often been mistakenly diagnosed as rheumatism or arthritis in these persons. Classic gout is often missed. In forty patients gout had been called rheumatism. We selected 100 cases of each condition for our study: 100 cases of rheumatic fever associated with cardiac lesions, and 100 cases presenting a history suggestive of gout, with 5 mg. of uric acid or higher. Tophi were present in 44 per cent. Some patients were in the acute stage; some were in the chronic stage. There was a hyperuremia in 72 per cent. It was low in 3 per cent with tophi. It may be one of the early signs, or it may be late. The roentgen ray is specific in the later stages. Only twelve of the 100 patients came with a diagnosis of gout. The others had been treated for rheumatic fever. One man had had gout forty-two years without a correct diagnosis. Aids in diagnosis are: (1) acute paroxysms; (2) personal habits of the patient; (3) tophi; (4) roentgen-ray observations. In fifty-eight cases there was the classic onset. Some patients had another joint than the great toe involved. In gout there is absence of cardiac involvement; no pain between attacks, and persistence of symptoms for a number of years. In 26 per cent of our cases we found renal lesions, stone, gravel and insufficiency. When the condition is chronic, with renal lesions, in either subacute or chronic forms, it should be considered gout. The clinical history is very important in differentiation, and on it prophylactic treatment must be based.

Treatment of Rheumatic Carditis by Roentgen Irradiation of the Heart

DRS. R. L. LEVY and ROSS GOLDEN, New York: Irradiation might be expected to have an effect on the heart; therefore this study was undertaken. Irradiation is now the routine treatment in tuberculosis, lymphadenitis, acne and other diseases. It has been used in furuncles, carbuncles and other acute conditions. The mode of action of the rays is not known, but it is supposed to modify the reaction of the patient. It also has an effect on keloids. This work was begun with the idea of modifying the scar tissue of the leaflets of the valves of the heart, but this result was probably not obtained. With small doses better results have been obtained. With larger doses pathologic lesions have appeared.

In the cardiac work, paroxysmal heart pain was a prominent feature. Treatment was given at the chondrosternal junction, with 10 per cent of the erythema dose. The entire cardiac area, front and back was treated. Small doses were given to avoid injury.

Thirty cases were given 249 irradiations. We took 649 electrocardiograms. Cases were followed up from one to three years. Electrocardiographic changes were present in seventeen cases; none were noted in thirteen. Twenty-one of the thirty patients showed improvement; three were improved temporarily; one was not improved, and five died. Improvement with electrocardiographic change occurred in fourteen; without changes, in ten. Changes were seen in the direction of the P wave and the T wave. There was also alteration in the electrical axis of the heart, with tendency to right-sided preponderance. No effect has been observed in the heart size. Nausea and vomiting occurred in fourteen cases. We treated four cases of subacute bacterial endocarditis without effect on the disease or the electrocardiogram. It may be that perhaps the roentgen rays densensitize the heart and prevent further injury for a time. In patients having a first attack, with or without cardiac involvement, irradiation may minimize the injury.

Therapy of Rheumatic Fever

DR. HARLOW BROOKS, New York: The new conception of this disease will cause us to modify our treatment. One of the most important changes in treatment is change in diet. We are dealing with a metabolic fault, and the old ideas of treatment caused further depletion of the patient and consequent anemia. The modern idea is to give a diet rich in iron to correct tissue waste; therefore convalescence is less prolonged, and complications less devastating. A proper bedside technic is important, as comfort of the patient is an element in the cure. Salicylates are indispensable. As some patients have an idiosyncrasy, the manner of administration of drugs requires careful individual study. Failure of salicylate treatment is usually due to inadequate dosage. If the drug cannot be given by mouth, it may have to be used by rectum or intravenously. It may also be given with salts of magnesium. Salicylates appear to prevent reinfections and to cause improvement in arthritis and vascular changes, although the nodules do not disappear under salicylates. Water is a therapeutic agent of value. Iodides are of value in the removal of chronic lesions. Vaccines are better for use in subacute and chronic conditions than in acute cases. Foci of infection should be attacked cautiously in the acute stages of the disease. Drainage should be established. Many of the newer remedies have not displaced the regular treatment of acute rheumatic fever, but they have materially added to our therapeutic armamentarium.

DISCUSSION OF SYMPOSIUM ON RHEUMATIC FEVER

DR. EMANUEL LIBMAN, New York: Epistaxis may possibly be of value in indicating activity of the rheumatic virus, if it occurs in a patient suffering from valvular disease that is not causing maked insufficiency, and if it had occurred previously in direct association with the attacks of rheumatic fever. Gout is certainly being much overlooked. The highest figure for the presence of streptococci in the blood of patients with rheumatic fever has been reported by Suranyi and Forri of Budapest —almost 79 per cent. In a study of sixty-six cadavers Eppstein and Kugel found nonhemolytic streptococci of the types recovered from the blood in cases of rheumatic fever, in almost 90 per cent of the cultures of the blood or bone marrow. In the heart muscle, they were present in nearly 50 per cent, and in the mitral valve, in 40 per cent.

DR. DAVID RIESMAN, Philadelphia: We have seen striking results from the use of serum, such as a disappearance of pain after a few injections. I have seen spontaneous disappearance of rheumatic nodules without any treatment. In regard to the delirium mentioned by Dr. Howard, one other reason for delirium, besides toxin, is the salicylate. Delirium is caused by salicylate, which tends to give horrible dreams. It has been pointed out that different murmurs develop. There is a dulness of the first sound because of edema. The persistence of vegetations causes an endocardial murmur.

DR. J. C. SMALL, Philadelphia: In regard to some work done a year ago, and which at present remains unreported, I should like to emphasize a few points. In cases in which repeated cultures were done, one type of organism was found consistently: *S. hemolyticus*. The strains of these organisms fall into a compact biologic group, and also a compact serologic group. This is important because streptococci isolated in rheumatic fever have belonged to such diverse serologic types. The organism mentioned has been isolated in Philadelphia, in England and in Syria, so that it has a widespread geographic distribution. Our work has covered 270 clinical cases. These cases were treated both with the antigen and a monovalent serum of this streptococcus. They have been treated with vaccines, and more recently with soluble products of the organisms. We used the serum during the developmental stage. At first we used unconcentrated serum, but with this we had to give intramuscular injections of from 30 to 150 cc. Once we gave 250 cc. As this serum was developed, it became more concentrated and we were able to decrease the doses to 20 or 40 cc. Then we developed the bovine antiserum, of which we use from 5 to 15 cc. Following the use of the concentrated serum we saw a very puzzling reaction, which followed large doses of antibody rather than large doses of serum. When we used weak serum we did not notice it. It is accompanied by pain,

swelling and redness. It can be eliminated by the administration of salicylates, about 60 Gm. a day. In regard to the use of vaccines in active immunization, with large doses of vaccine relapse occurs frequently, even with 0.1 mg. as an injection. In pseudoreactions, in subacute cases, there is first one reaction, and then fourteen days later a second reaction. When we developed soluble products, we made an emulsion of 100 million washed bacteria in physiologic solution of sodium chloride. This is slightly turbid. It is put in the icebox seven days and then filtered out. The product used is the soluble antigen. This is diluted 1,000 times and 10,000 times. The clinical product is bottled, and is given in doses of 0.1 cc. Yet sometimes relapse follows even such a small dose. These observations made us go still farther in our dilutions. I do not know whether we have reached safe clinical doses. There is a response to the serum which is specific: a response to the vaccine used in overdose, and a response to the antigen used in overdose. The latter is not confined to focal reactions. Nodules develop which disappear under treatment with antiserum. Patients show nodules twenty-four hours after injection with soluble antigen. Patients also develop symptoms referrable to the central nervous system, such as nervousness, insomnia, crying, melancholia; to the gastro-intestinal tract, such as pain, tympanites, anorexia and nausea, and to the vascular system, such as increased pulse rate and precordial pains. These conditions follow an overdose of antigen, but there is no febrile reaction, unless the dose is excessive. In regard to body weight, if the dosage is properly employed the patient gains in weight.

DR. HOMER F. SWIFT, New York: I think that the evidence Dr. Small gives is in support of the theory that we have advanced. If this is an antitoxic serum, it looks as if the more one gives, the worse the effect. That is contrary to previous experience. The relation to the phenomena of allergy is interesting. We had some antitoxic serum, and mixed it with filtrate. A much more severe reaction resulted, as the mixture of antibody and antigen acts more intensely. We have observed the same reaction in allergic animals. The serum was not available till this spring. After the publication of two articles on the use of hemolytic antistreptococcus serum, we used it in three patients in large doses, from 20 to 40 cc., and we observed exactly the same kind of activation of symptoms that Dr. Small reported. On the theory that it was antitoxic, we used this serum on the patients. The symptoms disappeared when salicylate was used. A point for discussion is whether we want to give serum at all. We do not know of any allergic phenomena that serum helps, but immunization does help allergic phenomena. With small doses of soluble antigen and small doses of nucleoprotein, we observed the same phenomena. I should like to emphasize Dr. Small's statement that we must proceed very carefully with dosage; if not, we may have serious, or fatal, results. The patients are so highly sensitive that they can be pushed over to the point where they cannot recover.

Hypertrophy (Adenoma?) of the Islands of Langerhans with Associated Hypoglycemia

DRS. GEORGE W. NORRIS and WILLIAM U. MCCLENAHAN, Philadelphia: A colored man, aged 41, gave a history of periodic attacks of loss of memory of a gradual onset, which generally lasted one and a half hours, occurred usually at midday and were relieved by taking food. Between attacks he was free of symptoms. The physical examination was essentially negative on admission. The following day the patient fell into coma from which he never recovered. The blood sugar showed 40 mg. of sugar per hundred cubic centimeters on this day. He developed a terminal bronchpneumonia and died seventy-two hours after admission. The spinal fluid examination was negative, except for a low sugar content (20 mg. per hundred cubic centimeters of fluid). In spite of the administration of dextrose by gavage, enterocylsis and intravenously, the hypoglycemia persisted and sugar determinations were 40, 46 and 38 mg. per hundred cubic centimeters on the three successive days.

At autopsy a partially encapsulated, vascular nodule, measuring 17 by 5 by 10 mm., was found in the pancreas, composed of cells similar in structure and arrangement to those of the Islands of Langerhans and associated with a generalized hyperplasia of the islands throughout the pancreas. The suprarenals and pituitary were negative. There was no evidence of metastasis, and the eosin and hematoxylin stains of the liver failed to show a significant decrease in its glycogen content. The analysis of both the pancreas and the tumor tissue for their insulin content was attempted but was unsuccessful. The finding of a lesion of the pancreatic islands in this case, associated with hypoglycemia and a very significant history, would seem to add further evidence toward the recognition of a new disease entity.

DISCUSSION

DR. RUSSELL M. WILDER, Rochester, Minn.: Last year Allan, Powers, Robertson and I reported the first case of this kind to be described. The symptoms of our patient were very much like those in Dr. McClenahan's case. At the autopsy, insulin extracts were made of the tumor tissue in the liver. The tumor in our case was a carcinoma. Shortly after our description was published, Thalhimer of Milwaukee performed an autopsy on a woman who had suffered for eighteen months with periodic epileptiform convulsions and found an adenoma of the pancreas with tissue very similar in appearance to that of the tumor in our case and also like that of the tumor described by Dr. McClenahan. Unfortunately, many clinical details are missing in the Thalhimer case; nevertheless three very low blood sugar concentrations were determined. These cases represent a clinical entity that has heretofore escaped recognition, a condition that is the antithesis of diabetes mellitus. We have to deal with a hyperplasia of the cells of an endocrine gland associated with overproduction of the specific incretion, the tumor cells retaining, at least in part, the specific endocrine function of the parent cells. It is not to be expected that all tumors arising from islet cells will produce insulin. That some do appears to be proved, and now that the attention of the profession is attracted to this condition I think we can anticipate that more of these cases will be discovered.

Specific Treatment of Epidemic Poliomyelitis

DR. SIMON FLEXNER, New York: Persons who have recovered from poliomyelitis carry in their blood a neutralizing, or what appears to be a viruscidal, substance. This viruscidal substance is also present in the blood of monkeys who have recovered from experimental poliomyelitis, and it can be produced in monkeys by suitable methods of graduated inoculation of the so-called virus of poliomyelitis. It is possible that in many persons who have not shown definite signs or symptoms of poliomyelitis this neutralizing material may also reside in their blood. This is indicated by the fact that sometimes normal blood will show this viruscidal property, and it is suggested by the fact that there are many persons during an epidemic who do not develop the entire series of signs of poliomyelitis as ordinarily recognized, but who may pass through some clinical types of the disease corresponding to what can be produced in monkeys by the inoculation of the virus. We are trying to determine whether it is possible to use this convalescent serum with any hope that if the disease is recognized early the more serious effects will be reduced in intensity or obviated altogether. In considering the reports of human cases in which the serum has been used in this way, no decision can be reached either for or against the use of convalescent serum. It is the only specific material that we possess. The real basis on which serum specific for poliomyelitis can be employed justifiably is drawn from experiments on monkeys. In these animals absolute demonstrations can be produced to show that under certain controlled conditions convalescent human serum, or convalescent monkey serum, will hold up the action of the virus of poliomyelitis so introduced into a monkey that without the employment of the serum the experimental infection invariably follows. That is the basis on which the use of specific serum is justified in man. In view of the possible recurrence of epidemic poliomyelitis next summer there is an effort on foot to secure a sufficient quantity of this convalescent serum so that it can be distributed either by state authorities or by other organizations on demand of a qualified physician for the treatment of early cases of poliomyelitis. There is considerable doubt as to how the serum is employed, and it must be employed, at least in part, by being injected by lumbar puncture into the cerebrospinal fluid. There is also doubt as to whether along with this injection of serum any advantage is to be gained by a simultaneous injection directly into the veins or under the skin or intra-

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muscularly. As it stands now, a single intraspinal injection seems adequate, and what is surprising is the length of time over which a single injection is active against the virus introduced directly into the brain by the injection through a trephine opening, a very severe mode of inoculation. If a single injection of convalescent human or monkey serum is made into the meninges of the monkey by lumbar puncture, and then after two days the animal is inoculated with the active virus, no infection occurs, and yet the dose in the control regularly produces paralysis.

DISCUSSION

DR. WILLIAM LLOYD AYCOCK, Boston: During the summer and fall of 1927, Massachusetts experienced a fairly large increase in poliomyelitis, which offered an opportunity for the use of convalescent serum in a relatively large number of cases. The treatment was limited to cases seen within the first four days of the disease, and in which paralysis had not already appeared. In 60 per cent of all cases treated paralysis developed. These patients have now all had complete muscle examinations, which can be compared with similar muscle examinations made in 600 other cases which occurred in the same locality during the same epidemic. There are great differences between the treated and the untreated cases, not only in the total amount of paralysis present but also in the severity of the paralysis. These differences seem much greater among the treated cases of mild forms of the disease which might ordinarily be missed.

DR. HENRY SEWALL, Denver: Have any therapeutic or prophylactic tests been made with the serum of persons who have been in very intimate contact with cases of poliomyelitis? In experiments on horse serum, we obtained results that seemed to give hope that just such immunization might occur without the appearance of the disease.

DR. CHARLES N. MEADER, Denver: Is there sufficient evidence to justify a statement as to how soon after the onset the serum must be given in order to produce results? Such a statement would be of some importance if the serum is available only in small amounts.

DR. WALTER R. CAMPBELL, Toronto: Is there any danger encountered through the injection of convalescent serum into a patient with a different blood group, when the serum is administered intravenously?

DR. SIMON FLEXNER, New York: Dr. Sewall's question is answered by the statement that immunization does take place because the persons come into contact with those who have the disease or carry the virus, or are subclinical cases. The injections should be made as early as possible; the earlier, undoubtedly the better. Dr. Aycock has the most favorable set of statistics at present available bearing on the ultimate question of the efficiency of this treatment. I myself feel that when the paralysis is extensive, nothing can be gained by using the serum. Surely in animals nothing is to be gained after the symptoms are clearly present. I know nothing about the blood groupings. So far as I can judge from the reports, no accidents have followed the injection of the serum either intrathecally or intravenously.

Erysipeloid Reactions as an Allergic Response

DRS. H. L. AMOSS and O. C. HANSEN PRUSS, Baltimore: In a clinical study of erysipelas we have observed not only cases in which the skin is involved but also those in which the subcutaneous tissues seem to be the seat of an inflammatory reaction, the skin remaining smooth and thin overlying it, although sometimes there are outcroppings in the skin itself. Thus we may speak of erysipelas and cellulitis, realizing that in some instances a distinction is not clear cut. Some of the patients with cellulitis have received antierysipelas serum, a few with apparently good results, and some without any response at all. In one of the cases in which there was apparent benefit after the injection of antierysipelas serum, the infection being caused by beta hemolytic streptococcus, there was a recurrence after some time, and this called our attention to a small group of cases of recurrent erysipelas or cellulitis that we called an erysipeloid reaction.

We thought that we could possibly explain this on the basis of an allergic reaction. The reaction is totally different from what is expected in ordinary cellulitis. There is a very slight diffuse infiltration with round cells and some edema, and very small nests of streptococci, some of which are partially digested.

From a study of thirteen cases of recurrent erysipeloid reaction, we feel that a streptococcic or staphylococcic infection may gain entrance at another point and either by lymphatic extension or toxin absorption cause a previously involved area to flare up. Among these cases, we think that epidermophyton, tinea cruris or oidium albicans has opened the way for staphylococci or streptococci. Treatment of the local site directed toward clearing up the fungous infection has thus far apparently prevented recurrences, but the time of observation is too short to warrant the conclusion that the method is entirely successful and we are aware that such recurrences cease spontaneously.

DISCUSSION

DR. A. R. DOCHEZ, New York: The type of reaction described by Dr. Amoss must be regarded as an example of local hypersensitiveness, in spite of the fact that a few organisms have been found in the sections. Local reactions, such as this, in which the focus for distribution of the antigen lies at a distance from the reacting site, are of great significance in pathologic studies. We have observed a number of such reactions in both animals and human beings under circumstances in which there could not be any question of the presence of a living organism. Animals injected intracutaneously with pure bacterial products may develop a very high degree of local sensitiveness. When this takes place, the antigen may be introduced at a distance from the sensitized area, and the reaction may be of increased intensity at the site of the original intracutaneous inoculation. The same phenomenon is observed in human beings.

Relapsing Febrile Nodular Nonsuppurative Panniculitis

DR. HENRY A. CHRISTIAN, Boston: The name is entirely descriptive. The disease is quite long in duration, and the patient to be reported on here had nine attacks. The histology of the lesion shows adipose tissue with infiltration by lymphoid and plasma cells and macrophages containing fat droplets. A certain type of necrosis goes on which results in atrophy of the lesion by absorption of the tissues. It is nonsuppurative in the sense that leukocytes are very infrequent in the tissues. There is edema. The name includes all our knowledge of the disease, but not of the etiology of the condition, because it is unknown. Cultures from the blood and the tissues were negative. It would seem that it is a fairly definite disease, or a clinical syndrome, represented by a recurrence of nodules in the panniculus adiposus, that run a certain course. During the stages of the development of the skin lesion the patient has fever, and is sick in the ordinary way that a patient with fever is sick. The total number of cases on record is three: the one reported on here; that of Parkes Webber reported in 1925, and apparently a very similar one reported by Gilchrist and Ketron in 1916.

DISCUSSION

DR. LOUIS MARSHALL WARFIELD, Milwaukee: About three years ago, I reported a case very similar to that presented, with the exception that in my case the panniculitis had affected the abdominal wall and involved the layers with peculiar solidifications of the fatty tissue, local destruction, and punched-out ulcers. The condition was apparently very much the same, with exactly the same symptoms, as that described by Dr. Christian. It came on in relapses, and eventually the patient became perfectly well. I think that for three years there has not been any return of the trouble.

DR. ALDRED S. WARTHIN, Ann Arbor, Mich.: I have seen a number of cases which must belong to this group. One of our patients was very fat with areas of fat necrosis developing in the subcutaneous panniculus all over the body, followed by extensive calcification. We are also of the opinion that localized areas like these, involving particularly the panniculus of the thighs, are not uncommon. I have looked on this condition as being a traumatic fat necrosis, followed very frequently by the production of large "fatstones," or large or diffuse areas of calcification. In the patient described, was there any history of multiple trauma over the legs? I think that possibly some of these areas of fat necrosis that are more sharply localized are the results of local obstruction of the circulation through thrombosis or embolism. It may be possible that in the severe cases there is some association with a pancreatitis, because we

do know that in cases of fat necrosis in the omentum and mesentery, ferments from the pancreas have been disseminated throughout the body and have produced fat necrosis in the tissues.

DR. THOMAS R. BOGGS, Baltimore: I am quite sure that I saw a woman with exactly this clinical picture. The successive attacks had endured for eleven years. In no instance was there suppuration, and she showed just such pigmented and depressed areas in the fat as these pictures of Dr. Christian illustrate, leaving a condition that slightly resembles scleroderma, without the glistening skin, but with a very firm connection of the fat to the superficial fascia, although the skin was slightly movable.

DR. HENRY A. CHRISTIAN, Boston: In regard to the question of this disease being something like scleroderma, it was particularly characteristic of these lesions that the skin was entirely soft and movable over the lesion, and in no sense was there any suggestion of scleroderma, or any evidence of scarring. I have seen roentgenograms of tissue from cases of calcification similar to those described by Dr. Warthin. On the whole, it seems best not to include them in this entity. Lee and Adair have reported areas of necrosis within breast tissue with almost the same histology which were considered the result of trauma, whose importance lies in the fact that they cause nodules which are sometimes diagnosed as carcinoma. In view of the present attitude in regard to undulant fever, I have wondered since I saw the case whether possibly *Bacillus abortus* or some of its friends might not be responsible.

Malta Fever: Agglutinin Absorption Studies

DRS. WILLIAM L. MOSS, Boston, and MAXIMILIANO CASTANEDA: A physician, engaged as resident bacteriologist in a hospital laboratory, had been handling between twenty-five and thirty cultures of *Brucella melitensis* (varieties: *abortus, para-abortus, melitensis* A, *melitensis* B, and *paramelitensis* B) over a period of four or five months. Feb. 28, 1927, he became ill with a typical, severe attack of undulant fever. The diagnosis was first made on the basis of a positive agglutination reaction. Later, a small gram-negative bacillus was isolated from the blood which culturally, morphologically, and by agglutination reaction belonged to the *Brucella* group. Simple agglutination tests, in dilutions of the patient's serum against the several varieties of *melitensis* to which the patient had been exposed, did not reveal significant differences. By preparing antiserums (by immunizing rabbits) against each variety of *melitensis* and the strain isolated from the patient, and by making agglutinin absorption tests, it was possible to identify the organism obtained from the patient as *Brucella melitensis*, var. *paramelitensis*, which was apparently identical with strain number 550 obtained from Alice Evans.

Intermittent Hydrarthrosis as Complication of Malta Fever

DR. B. M. BAKER, Baltimore: Intermittent hydrarthrosis is a condition characterized by synovial effusions which recur and subside with clocklike regularity. The condition is rare; eighty-one examples are to be found in the literature up to the present. It occurs in both men and women, young and old. The knee joints are most frequently involved. The course of the disease does not differ in the reported cases. The etiology is obscure. The history is variable; in certain cases a joint previously believed to have been healthy becomes the seat of a periodic swelling; in other cases a joint injured by trauma or by disease becomes the seat of a swelling. Opinions regarding the etiology have never been in agreement. In some cases the disturbance seems to be vasomotor in origin, and in others inflammatory. In regard to the inflammatory etiology, certain isolated facts are of interest. In a large majority of the cases, the condition is preceded by a febrile illness, frequently called "malaria." In other cases, the joint attacks are accompanied by slight fever, undulant in type. In the majority of cases cultures from the joint fluid are sterile. In two cases, direct smears from the fluid showed a gram-negative diplococcus and a typhoid-like bacillus. Neither of these grew out on culture. In one case, puncture of one knee produced 25 cc. of a straw colored fluid, containing 6,500 white cells per cubic centimeter and 75 per cent lymphocytes. In direct smears a gram-negative diplococcus was seen, and on culture a growth was obtained after seven or eight days' incubation. Puncture of the left knee was repeated, and later the right knee was punctured. A culture of the fluid was positive. On two occasions the blood culture was positive. Studies of the organism recovered in each instance showed it to be morphologically, serologically and biologically identical with the *Brucella melitensis-Bacillus abortus* group. A specimen of urine was inoculated into a guinea-pig, and organisms recovered from the animal were classified in the same group. It resembled closely, but not exactly, the bovine type of *B. abortus*. Throughout this period agglutination reactions were negative, the patient's serum, four strains of U. S. Public Health Service organisms and the patient's own organism being used. This suggested a possible benefit to be derived from the administration of a vaccine, and an autogenous vaccine was given, according to the method of Hine. The temperature continued to be elevated, but was slightly lower than it had been. The weight gradually increased, and symptomatically the patient was a great deal better. The red blood count and hemoglobin percentage rose, and a change took place in the swelling of the knee joints. The patient was given convalescent malta fever serum on three occasions, in doses of 12 cc. each time. There was an immediate effect on the temperature, which became normal and remained so. All symptoms of the general infection disappeared. He gained weight steadily and the blood picture rapidly returned to normal. Blood and urine cultures were repeatedly negative, and the blood serum agglutinated his own strain and known strains of *B. melitensis* in high dilutions. There was a definite diminution in the swelling of the knee joints, and he could walk with only slight discomfort. It therefore seems that the general infection bore some relation to the swelling of the knees.

Treatment of Lobar Pneumonia with Felton's Concentrated Antipneumococcus Serum

DRS. R. L. CECIL and W. D. SUTLIFF, New York: During the past two years concentrated polyvalent antipneumococcus serum has been used in the specific treatment of pneumonia. As the patients entered, they were divided into two groups, and every alternate patient was given Felton's serum, regardless of type. The treatment was started before the type was determined. The method of desensitization employed was not that usually used. A skin test and an ophthalmic test were done as a routine, and if these were negative we proceeded with the intravenous treatment, but the initial dose was very small, usually 5 cc. If the patient did not show any symptoms, a full dose was given an hour later. From 10 to 20 cc. has been given intravenously as a standard dose, repeated in two or three hours, so that the patients get about 100 cc. during the first twenty-four hours. On the second day, the dosage is governed by the condition of the patient. If the clinical condition is not improved, similar treatment is kept up for two or three days, until it appears that the patient is going to improve, or that further treatment is useless. The development of immune bodies in the patient's blood is also another factor governing treatment.

Two kinds of reactions were encountered, both fortunately infrequently, and as the Felton serum has been improved, they have appeared even less frequently. Formerly, certain so-called foreign protein reactions occurred with certain lots of serum. When these were encountered, the lot was discarded. Allergic reactions have been seen occasionally, about as frequently as with ordinary type I serum. They usually occur in asthmatic patients. Serum sickness occurred in only 15 per cent of the cases. The most striking results were in type I cases. The treated cases showed a drop in temperature about forty-eight hourse before the untreated cases. The death rates in the two type I groups were 18 per cent in the treated aginst 32 per cent in the untreated. With type II pneumonia, the death rates were 39 per cent in the treated cases against 52 per cent in the untreated cases. Type III cases have been unaffected by specific treatment. The type IV group has been interesting because we do not know exactly what a type IV pneumococcus is, and because every now and then a striking effect has been produced in a type IV pneumonia with the Felton serum. As in other forms of specific treatment, when initiated early, the results were better.

(To be continued)

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Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

8: 299-475 (May) 1928

Bacterial Pollution of Bathing Beach Waters in New Haven Harbor. C. E. A. Winslow and D. Moxon, New Haven, Conn.—p. 299.

Amebiasis in Kittens Infected with Amebas. J. F. Kessel, Peking.—p. 311.

Spontaneous Streptococcus Infections in Guinea-Pigs. E. I. Parsons and R. R. Hyde, Baltimore.—p. 356.

Sanitary Quality of Some Commercial Milk Powders. J. H. Shrader and Others, Baltimore.—p. 386.

Respiratory Immunity in Rabbits: III. Production of Heterophile Antibody in Rabbits by Intranasal Infection with Bacterium Lepisepticum. G. Howard Bailey, Baltimore.—p. 398.

Arch Mechanics of Normal Adult Foot. H. L. Dunn, Baltimore.—p. 410.

Habits of Anopheles Rondoni in Argentine Republic. N. C. Davis and R. C. Shannon, New York.—p. 448.

Transmission of Filaria in Northern Argentina. N. C. Davis, New York. —p. 457.

Development of Ovarian Follicles in Argentine Anopheles. N. C. Davis, New York.—p. 467.

8: 1-148 (May Supplement) 1928

Mass Diagnosis of Hookworm Infection. C. Lane, Santa Ana, Calif.—p. 1.

American J. Medical Sciences, Philadelphia

175: 581-720 (May) 1928

*Response of Reticulocytes to Liver Therapy: Particularly in Pernicious Anemia. G. R. Minot, W. P. Murphy and R. P. Stetson, Boston. —p. 581.

*Treatment of Pernicious Anemia with Liver Extract: Effects on Production of Immature and Mature Red Blood Cells. G. R. Minot, and Others, Boston.—p. 599.

*Leukemia: Subacute Form. B. L. Crawford and E. Weiss, Philadelphia.—p. 622.

*Clinical and Pathologic Data in Cases Exhibiting T Wave Negativity in Electrocardiograms. F. A. Willius, Rochester, Minn.—p. 630.

*Rheumatic Fever: I. Specificity of Streptococcus Cardioarthritidis in Rheumatic Fever and Sydenham's Chorea. J. C. Small, Philadelphia. —p. 638

Id.: II. Present Development of Biologic Products of Streptococcus Cardioarthritidis and Their Application in Treatment of Rheumatic Diseases. J. C. Small, Philadelphia.—p. 650.

Certain Factors Militating Against Accurate Correlation of Physical and Roentgen-Ray Examinations of Chest. F. M. Pottenger, Monrovia, Calif.—p. 676.

Paroxysmal Oculogyric Crises in Parkinsonian Encephalitis. I. Pardee, New York.—p. 683.

Response of Reticulocytes to Liver Therapy.—Minot et al. contend that the anemia of pernicious anemia is primarily dependent on the failure of the primitive cells in the bone marrow to differentiate toward mature erythrocytes. In pernicious anemia there occurs with extraordinary regularity a prompt, temporary, pronounced increase of the reticulocytes in the peripheral blood following the administration of large amounts of liver, kidney or potent fractions of liver. The number of reticulocytes usually remains definitely elevated for about nine days. The reticulocyte response, which was studied in more than 150 cases of pernicious anemia, is ascribed to the specific active principle effective in pernicious anemia promoting the growth of the primitive cells that crowd the bone marrow in relapse, probably by hastening or permitting their maturation. The height to which the percentage of reticulocytes rises in the usual case is in inverse relation to the level of the red blood cells. Patients with more than 3 million red blood cells per cubic millimeter never exhibit more than a slight response of the reticulocytes. In essentially all cases, however, treated with adequate amounts of active principle, the red blood cells rapidly increase to normal. Accompanying the response of the reticulocytes other immature types of formed bone marrow elements may appear in the blood, and the white blood cells and platelets increase. If treatment is commenced when there is a considerable spontaneous increase of reticulocytes, or when this has just occurred, no subsequent rise in these cells may follow. The feeding of large amounts of liver does not produce any response of the reticulocytes in normal persons. A reticulocyte response to liver therapy may occur in other cases of anemia than pernicious anemia, but it is absent or slight in ordinary cases of "secondary" anemia. Some unusual cases and some cases of anemia associated with pregnancy have shown a marked response of the reticulocytes like that seen in pernicious anemia. This has also occurred in sprue and in anemia due to the fish tapeworm.

Liver Extract in Pernicious Anemia.—A standardized extract of liver has been employed by Minot et al. in 160 cases of pernicious anemia, which, given daily in such amounts as are derived from 300 to 600 Gm. of liver (from 9 to 18 Gm. of the extract), has caused with regularity prompt and striking improvement in the health of eighty-nine patients. Similar results have been obtained in more than seventy other cases treated with differently prepared fractions of liver. Standardized extract from 500 or 600 Gm. of liver apparently is sufficient to produce a maximum response of young red blood cells in essentially all cases. There is a direct relationship between the rate at which the red corpuscles increase and the amount of potent material fed, up to a maximum. On the average, when liver extract derived from 500 to 600 Gm. of liver has been fed daily to patients with less than 2 million red blood cells per cubic millimeter of blood, it has increased the concentration of these cells about 2.5 million per cubic millimeter in thirty days. After two months of adequate therapy with liver extract, red blood cell counts in the vicinity of 5 million are to be expected. The patients treated with liver extract have been given an adequate well balanced diet containing no liver or kidney. The striking and rapid symptomatic improvement has been comparable to that reported in cases treated with whole liver. The active principle effective in pernicious anemia appears particularly to stimulate the formation of red blood cells. The return to normal of red blood corpuscles usually proceeds more rapidly than that of hemoglobin as the result of treatment with liver, with kidney or with liver extract. The hemoglobin increases perhaps more slowly in cases treated with liver extract and a diet poor in sources of iron and in foods that accelerate hemoglobin regeneration than when potent extracts are given and the diet is well balanced and rich in such foods. It is emphasized that the continued ingestion of some source of the active principle effective in pernicious anemia is necessary to prevent relapse in this disease.

Subacute Leukemia.—Six cases are reported by Crawford and Weiss. They had an insidious onset and had a gradual course of several months with fatal termination. Clinically they resembled typhoid or subacute bacterial endocarditis. The important symptoms were necrotic processes in the mouth or throat, fever and progressive anemia. The total leukocyte count may be normal or only slightly increased, but the study of the stained blood film shows the predominant presence of immature white cells. The oxydase reaction is sometimes helpful in determining whether these cells are lymphocytic or myelogenic in origin, although it is not practically important to distinguish the lymphatic and myelogenous forms of the disease. Hematologic differentiation from acute mononucleosis and other benign leukemoid reactions is important and depends on their milder clinical course, the absence of profound red blood cell changes and the failure of such processes to maintain consistently a preponderance of immature white cells in the blood.

Cases with T Wave Negativity.—Willius reports on 130 cases in which the electrocardiograms showed T wave negativity (other than in lead III alone) and in which necropsy was performed. An attempt is made to correlate the clinical features and the pathologic observations. The clinical types of cardiac disease were numerous, but hypertensive cardiac disease (fifty-four cases, 42 per cent) and coronary disease (twenty-five cases, 19 per cent) occurred with greatest frequency. Significant sclerosis of the coronary arteries was demonstrated at necropsy in fifty-two cases (40 per cent). In fifty-five cases (42 per cent) the weight of the heart exceeded 500 Gm.

Etiology of Rheumatic Fever.—*Streptococcus cardioarthritidis* is a new species of streptococcus, which is readily

recognized by its cultural and serologic characters. Evidence is presented by Small bearing on the specificity of this microorganism in the etiology of rheumatic fever and chorea, and itemizing observations on: (*a*) its association with the disease; (*b*) its ability to produce experimental lesions in animals; (*c*) its agglutinins in the patient's serum; (*d*) its opsonins in the patient's serum. Small reports favorable changes following the use of its antiserum in patients suffering with rheumatic fever, chorea, rheumatic carditis or subcutaneous nodules.

American J. Ophthalmology, Chicago

11: 347-430 (May) 1928

Pocket Flap in Cataract Extraction. C. N. Spratt, Minneapolis.—p. 347.
Correction of Ptosis by Fascia Lata Hammock. G. S. Derby, Boston. —p. 352.
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Tendon Transplantation for Paralysis of External Rectus: Case. F. H. Rodin and W. F. Swett, San Francisco.—p. 369.
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Papilledema in Acute Syphilitic Meningitis and Meningo-Encephalitis. R. L. Glass and P. H. Garvey, Ann Arbor, Mich.—p. 377.
Sporotrichosis of Eyelid. B. Y. Alvis, St. Louis.—p. 381.
Case Substantiating Relaxation Theory of Accommodation. A. L. Brown, Cincinnati.—p. 383.
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Id. E. B. Dunphy, Boston.—p. 387.

American Journal of Surgery, New York

4: 465-572 (May) 1928

Listerism: Properly and Improperly Applied in Treatment of Infections of Bones and Joints. H. W. Orr, Lincoln, Neb.—p. 465.
Four Cases of Osteomyelitis. S. Kleinberg, New York.—p. 475.
Orr Method in Treatment of Chronic Osteomyelitis. W. M. Brickner, New York.—p. 476.
Hydatid Cyst of Lungs: Sixteen Cases. C. Heuser, Buenos Aires.—p. 486.
Colostomy Under Local Anesthesia. C. J. Drueck, Chicago.—p. 491.
Detorsion and Stabilization of Fifth Lumbar Vertebra in Scoliosis. P. B. Steele, Pittsburgh.—p. 493.
Scoliosis Treated by Fusion: 348 Cases. J. C. Risser, New York.—p. 496.
Congenital Absence of Appendix (Agenesis) and Bicornuate Uterus with One Cervix. A. Jacobs, New Orleans.—p. 500.
Relationship of Female Sex Hormone to Onset of Labor. M. P. Rucker, Richmond, Va.—p. 508.
Wide Amputation of Rectum by Coccyx-Perineal Route in Ventral Position of Depage. G. Michel, J. Guibal and F. Reny, Nancy, France. —p. 515.
Early and Late Surgical Treatment of Carcinoma of Colon. R. Smith, Los Angeles.—p. 522.
Setting Fractures by Electromotive Device. J. J. Moorhead, New York. —p. 525.
Point in Technic of Kidney Stone Operations. E. Beer, New York.—p. 530.
Effect of Nephrotomy on Renal Function: Incision and Suture. E. Beer, New York.—p. 531.
Surgery of Pain: Cervical and Lumbar Ganglionectomy. W. F. Honan and S. A. Thompson, New York.—p. 532.
Victor Emmanuel III National Institute for Study and Treatment of Cancer, Milan, Italy. G. Fichera, Milan.—p. 543.
Carcinoma of Bladder Secondary to Artificial Cystitis: Calculus Pyelonephrosis: Nephrectomy and Total Cystectomy. E. Beer, New York. —p. 548.
Enlargement of Breasts After Prostatectomy. L. T. Mann, New York. —p. 549.
Congenital Malformations of Feet: Congenital Fusion of Scaphoid with Astragalus and Complete Absence of One Toe. A. B. Illievitz, Montreal.—p. 550.
Lymphosarcoma of Sigmoid. M. Golob, New York.—p. 552.
Ball Valve Colostomy Opening in Case of Adenocarcinoma of Rectum. G. A. Wyeth, New York.—p. 557.

American Journal of Syphilis, St. Louis

12: 157-300 (April) 1928

Antagonistic Action of Carbohydrates and Electrolytes on Behavior of Leukocytes and Excretion of Arsenic Following Administration of Arsphenamines. C. N. Myers and E. F. Mueller, New York.—p. 157.
*Late Hereditary Syphilis with Lung Complications. A. D. Smith, New York.—p. 177.
*Syphilis and Pregnancy. J. R. McCord, Atlanta, Ga.—p. 181.
Syphilis of Osseous System. A. H. Galvin, Hollywood, Calif.—p. 187.
Syphilis from Standpoint of General Medicine. W. A. Jenkins, Louisville, Ky.—p. 194.
Tabetic Spinal Osteo-Arthropathy: Four Cases. J. L. Garvey and R. L. Glass, Ann Arbor, Mich.—p. 205.
Chancre of Cervix. P. F. Stookey and H. M. Roberts, Kansas City, Mo. —p. 212.
Ocular Syphilis: Early Changes in Retinal Vessels. J. H. Roth, Kankakee, Ill.—p. 216.
Congenital Syphilis of Testis: Twelve Cases. W. C. Menninger, Topeka, Kan.—p. 221.
*Paroxysmal Dyspnea: Diagnostic Value in Central Vascular Syphilis. L. T. Gager, Washington, D. C.—p. 235.
*Syphilitic Headache. P. E. Bowers, Los Angeles.—p. 241.
*Fatalities Following Use of Arsphenamine. E. Scott and R. A. Moore, Columbus, Ohio.—p. 252.
Plea for "Standard Treatment for Syphilis." A. Mattes, New Orleans. —p. 263.
Microscopic Slide Precepitation Test for Syphilis. F. B. Johnson, Charleston, S. C.—p. 270.
Comparison of Kolmer and Kahn Tests for Syphilis. C. E. Roderick, F. S. Salisbury and C. G. Cates, Camp Custer, Mich.—p. 276.

Hereditary Syphilis: Pneumonia.—Smith reports two cases of hereditary syphilis in children, aged 5 and 12 years, respectively, in which pneumonia developed. In one of the cases it was a tuberculous pneumonia. In this case the tuberculosis was quiescent until after the administration of arsphenamine, when it became very active.

Syphilis and Pregnancy.—McCord reports his observations in 250 pregnant women who had syphilis and who were treated with some arsenic preparation and mercurial inunctions. He does not attempt to cure the syphilis of the mother, but to prevent syphilis in the baby. The mothers are given 0.45 Gm. of neoarsphenamine and a mercurial inunction. This treatment is continued each week until the baby comes. The incidence of full-term and premature stillbirths was 12 per cent. Only five stillbirths, both full-term and premature, occurred in patients having as many as five treatments. McCord does not believe that syphilis is a frequent cause of abortion; nevertheless, eighteen of these women had twenty-five abortions. Forty-eight of these mothers had sixty-four children who died in infancy. Examination of the long bones by the roentgen ray was made in ninety-five babies. The changes characteristic of syphilis were found twelve times. With only one exception, examination by the roentgen ray was not positive for syphilis in a baby whose mother had received more than three treatments. This patient had taken seven treatments, and the baby was born alive at full term. Only one baby was born alive and was premature. Histologic examination of the placentas showed only one negative for syphilis. Repeated Wassermann tests in all mothers but one were positive. Serologic work was done on 229 babies and in the majority of them the test was done on the cord blood, the sinus blood and the spinal fluid. Strong positive reactions were obtained in forty-two babies. A histologic examination was made of 192 placentas. Of these, seventy-nine were negative, fifty-five were positive, and fifty-nine were influenced by treatment. These 250 women had strongly positive blood Wassermann reactions. The test was repeated in 173 of them at the time of labor; the reaction changed from positive to negative ninety-five times, and remained strongly positive in seventy-eight cases. Of the seventy-eight in whom the reaction remained positive, fifty-four received less than five treatments; the other twenty-four were scattered irregularly throughout the most frequent number of treatments. In no case did the Wassermann reaction remain positive after as many as thirteen treatments.

Paroxysmal Dyspnea.—Paroxysmal dyspnea, or cardiac asthma, Gager says, is due to anoxemia of the respiratory center, and is evidence, commonly, of left ventricular insufficiency. The failure of the left ventricle is associated especially with the central vascular lesions of syphilis. The occurrence of paroxysmal dyspnea, therefore, should lead to a careful diagnostic study of the patient. If syphilis is found to be present, conservative specific treatment, including the use of arsphenamine, relieves symptoms and prolongs life.

Syphilitic Headache.—Bowers insists that all headaches are to be regarded as of possible syphilitic origin, and syphilis is only to be ruled out by a process of exclusion in all cases. Persistent, periodic and nocturnal headaches call for searching physical and neuropsychiatric examinations for the possible detection of syphilis.

Death After Arsphenamine Injection.—Scott and Moore report the case of a girl, aged 16, who had been given three injections of neoarsphenamine before they saw her. May 29, an injection of 0.6 Gm. of neoarsphenamine was given without immediate untoward effects. Six other patients were given

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injections of the same lot of drug and did not experience any ill effects. Two days after the injection, the patient complained of a slight headache and malaise. This malaise and headache became very severe in the evening, and early on the morning of the next day she became comatose. There was no nausea or vomiting at any time. Three days after the injections, another one of the patients became ill with the same symptoms. This patient became comatose the same afternoon. The two patients presented the same clinical symptoms; namely, headache, malaise and coma; both received neoarsphenamine intravenously and were taking iodides by mouth, but mercury had not been used in either case. In the terminal twenty-four hours of life there was a complete anuria in both cases. A complete autopsy report on one case is given.

Archives of Pathology, Chicago

5: 763-938 (May) 1928

*Pulmonary Atelectasis Following Thyroidectomy. R. P. Ball, Cleveland.—p. 763.
Malignant Rhabdomyoma of Spinal Musculature. S. B. Wolbach, Boston.—p. 775.
*Mobilization and Transfer of Clasmatocytes. R. W. Linton, New York.—p. 787.
*Sedimentation Rate of Erythrocytes: Relation to Fibrin Value and Cholesterol Content: Application in Tuberculosis. M. Pinner, K. Knowlton and R. G. Kelly, Northville, Mich.—p. 810.
Gram Stain: I. Quick Method for Staining Gram-Positive Organisms in Tissues. R. D. Lillie, Washington, D. C.—p. 828.
Simplified Method for Cultivation of Anaerobes in Fluid Media. S. A. Petroff, Trudeau, N. Y.—p. 834.
Rapid Method for Decalcification. D. H. Shelling and M. B. Halpersohn, New York.—p. 835.
Electropathology: Pathologic Changes Produced by Electric Currents. R. H. Jaffe, Chicago.—p. 837.

Pulmonary Atelectasis Following Thyroidectomy.—Four fatal cases of lobar atelectasis are reported by Ball, two unilateral, two bilateral. In each case death followed an operation on the thyroid gland. The pathologic observations were similar in each case. The atelectatic lobes were characteristic in appearance, presenting a disproportion in the size of the lobes, the atelectatic lobes being sharply demarcated by color, by a clean glistening pleura and by a flabby, limp consistency. The microscopic examination disclosed a picture not easily confused with any other lesion of the lung. The etiology of these cases is apparently best explained on a mechanical basis, the most essentially responsible factor being a lowering of the intrapulmonary pressure. In two incomplete experiments on dogs, the intra-alveolar pressure was lowered without resulting atelectasis.

Mobilization and Transfer of Clasmatocytes.—Linton found that in animals with areas of granulation tissue in the peritoneal wall, intrapleural irritation with an aleuronat and starch mixture results in the production of an exudate and of a subserous infiltration richer in clasmatocytes than in animals without such a peritoneal focus of cells. When from 100 to 250 times the minimum lethal dose of a highly virulent strain of hemolytic streptococcus is used intrapleurally in place of the aleuronat and starch mixture, the animals are found to be protected in 73 per cent of the cases. The detailed study of the changes that occur under these circumstances in the pleural wall and pleural exudates strongly suggests that participation of clasmatocytes from the peritoneum is the basis for the intrapleural immunity produced. Reinoculation of the cavities with multiples of the minimum lethal dose shows immunity in both pleural cavities for at least twenty days and in the right cavity for at least thirty days. The animals are also found immune to a second intrapleural inoculation given from forty to sixty days after the formation of the peritoneal focus.

Blood Fibrin Content and Sedimentation Rate in Tuberculosis.—Pinner et al. failed to find a quantitative relation between the fibrin content of the blood and the sedimentation rate in clinical tuberculosis, under normal conditions or during slight physical disturbances. This was true also for the alleged relation between cholesterol content and sedimentation rate. Although a higher average rate is found in active tuberculosis than under normal conditions, this increase is far from constant and it is not parallel with the extent and the progressiveness of the lesions. The prognostic value of the sedimentation test is minimal, and, except in extremely rare instances, this test is not apt to furnish information beyond that gained by clinical and bacteriologic observations. The clinical value of fibrin determinations in clinical tuberculosis is of the same order.

Archives of Physical Therapy, X-Ray, Radium, Omaha

9: 193-240 (May) 1928

Physical Therapy in Treatment of Illnesses Caused by Light, Heat, Cold, Mechanical Irritation and by Mental or Physical Exertion. W. W. Duke, Kansas City, Mo.—p. 193.
Physiologic Action of Diathermy in Lobar Pneumonia. G. Clement, Duluth, Minn.—p. 199.
Physical Therapy and Endocrines. J. H. Hutton, Chicago.—p. 203.
Radium and Radon in Treatment of Epithelioma of Lip. F. E. Simpson and R. E. Flesher, Chicago.—p. 207.
Blending of Physical Agents. J. U. Giesy, Salt Lake City.—p. 209.
Ultraviolet Radiations in Therapy of Pulmonary Tuberculosis. H. H. Redfield, Chicago.—p. 217.
Infection About Shoulder. H. Wahlig, Sea Cliff, N. Y.—p. 222.

Association of American M. Colleges Bulletin, Chicago

3: 193-288 (July) 1928

*Report on Applications for Matriculation in Schools of Medicine for 1927-1928. D. B. Myers, Bloomington, Ind.—p. 193.
*Experiment with Curriculum. L. H. Baker, Baltimore.—p. 200.
Twelve Years' Experience of University of Minnesota in Graduate Medical Education. L. B. Wilson, Rochester, Minn.—p. 210.
Physics and Physicists in Medicine. C. Sheard, Rochester, Minn.—p. 220.
Medical Education as It Strikes Anatomist. H. von W. Schulte, Omaha.—p. 229.
Planning Postgraduate Medicine. W. D. Cutter, New York.—p. 237.
Method of Teaching Anatomy. W. S. Sullivan, Madison, Wis.—p. 241.
Practical Roentgenographic Teaching Collection. G. H. Jackson, Jr., Chicago.—p. 246.
Administrative Personnel of American Medical Schools. G. C. Robinson, Nashville, Tenn.—p. 249.

Study of Applications for Admission to Medical Schools.—Myers states that for the school year 1927 to 1928, 11,282 prospective medical students made 23,509 applications for admission. Of this number, 6,496 were accepted. The figures for 1926 to 1927 were: 8,500 applicants made 20,093 applications; 6,420 were accepted. In approximately 2,900 cases the credentials were inadequate, and in nearly 2,000 instances the credentials were not examined. One hundred and thirty-eight applicants made from ten to thirty-seven applications each.

New Curriculum at Johns Hopkins.—Baker presents the new curriculum adopted by Johns Hopkins University Medical School last October. The new curriculum provides for thirty-two weeks of instruction and one week of examination. Instruction is given through four quarters of approximately eight weeks each. The total amount of the students' time utilized for required subjects is 2,635 hours; the rest of his time (2,360 hours) is free. The curriculum designates the major subjects of medical education, the whole scheme of instruction being made to center about clinical medicine. These major subjects of the four years are anatomy (including histology and neurology), physiology, physiologic chemistry, pharmacology, pathology (including bacteriology), medicine, surgery, obstetrics, psychiatry, pediatrics, ophthalmology. Responsibility for adequate and wise employment of his free time rests wholly with the student. The school of medicine, through its committees supervising instruction and examination, will consider eligible for the degree of Doctor of Medicine only those students who have completed successfully the minimal curriculum of required work and who can, in addition, demonstrate an intelligent use of their free time. The greatest amount of liberty is to be allowed in the interpretation of what constitutes intelligent use. The student may devote his free time to additional work in a required subject. He may, if properly qualified, work at a problem in research under the direction of a faculty member. In his quarters free from required work, the student may even elect to go to another institution. Although the student carries considerably more responsibility than he did previously for the rounding of his elementary medical education, he also finds more opportunity to pursue lines in which he is especially interested, and is not compelled to do exactly what his fellow student does. One of the most conspicuous opportunities which the new curriculum offers the student is to be found in the facility with which, under it, he may construct a program of study emphasizing a subject in which he discovers that he possesses ability and interest. The official record of the student's examinations will

show only whether he has passed or failed. The fitness of the student will not be determined entirely by the results of his examination, but also by the judgment of his several instructors regarding his capabilities.

Atlantic Medical Journal, Harrisburg, Pa.

31: 529-624 (May) 1928

*Physical Therapeutics: Its Use in General Practice of Medicine. C. R. Jones, Pittsburgh.—p. 529.
*Id.: Application of Physical Therapy to Acute Pulmonary Diseases. I. H. Alexander, Pittsburgh.—p. 531.
*Id.: Physical Therapy in Nervous and Mental Diseases. H. L. Mitchell, Pittsburgh.—p. 532.
Ultraviolet Therapy: In Treatment of Skin Diseases in Childhood. L. G. Beinhauer, Pittsburgh.—p. 535.
*Id.: Light Therapy in Deficiency Diseases of Children. P. Nicholson, Ardmore, Pa.—p. 537.
*Id.: Light Therapy for Extrapulmonary Tuberculosis in Children. R. T. Ellison, Philadelphia.—p. 542.
Knee-Joint Injuries. J. J. Moorhead, New York.—p. 547.
Injuries of Foot and Ankle. A. B. Gill, Philadelphia.—p. 552.
Empiric Clinical Classification of Chronic Suppurative Otitis Media. H. I. Lillie, Rochester, Minn.—p. 559.
Etiologic Factors in Chorea. A. B. Vastine, Danville, Pa.—p. 564.
Spontaneous Rupture of Aorta Above Diaphragm. C. G. Strickland, Erie, Pa.—p. 566.
Echinococcus Cyst of Liver. B. Z. Cashman, Pittsburgh.—p. 566.
Duplex Uterus Bicornis. H. C. Cassidy, Lewistown, Pa.—p. 567.
*Extensive Gangrene of Stomach. H. M. Armitage, Chester, Pa.—p. 568.
Properitoneal Unilocular Hernia of Sigmoid. H. B. Gibby, Wilkes-Barre, Pa.—p. 569.
Rhabdomyosarcoma of Buttock. J. H. Wagner, Pittsburgh.—p. 570.
Chronic Intussusception of Descending Colon. W. M. Kunkel, Harrisburg.—p. 571.
Nephrolithiasis with Kidney Destruction. J. P. Harley, Williamsport, Pa.—p. 572.

Value of Physical Therapy.—Jones regards physical therapeutics as a necessary branch of the practice of internal medicine and surgery. Instruction in physical therapeutics in medical schools is entirely inadequate or nonexistent. This should be corrected by changes in premedical, undergraduate and postgraduate instruction. There should be a department of physical therapeutics in every hospital, directed by a physician trained in physical therapeutics or conducted under the advice of a staff committee.

Physical Therapy in Acute Pulmonary Diseases.—Alexander says: While certain of the therapeutic effects attributed to diathermy — such as increased temperature or bactericidal effect — are still in question and will afford ample ground for much disputation for some time to come, the prompt relief of pain, the great improvement in the general comfort, and the consequent uplift of the morale of the patient, give to diathermy an increasingly prominent place in the treatment of lobar pneumonia and pleurisy.

Physical Therapy in Nervous and Mental Diseases.—The danger in the use of physical therapy in nervous and mental diseases, in Mitchell's opinion, lies in the tendency of the patient, and in some instances of the physician, to place too much confidence in it. If the physician puts all his faith in it and feels that it absolves him from the necessity of other forms of therapy, he will surely fail. Physical therapy is safe only when it is used with a clear understanding that help and not a cure can be expected. Viewed in this light and used with this understanding, it is a valuable asset in the management and treatment of a large percentage of mental and nervous diseases.

Ultraviolet Ray in Deficiency Diseases.—Nicholson says: Ultraviolet rays from the air-cooled mercury vapor quartz lamp are specific in tetany, rickets and spasmophilia, and are valuable as a general tonic in depressed bodily states, such as anorexia and some cases of anemia, and in poor nutrition. The ultraviolet ray holds out some hope as an aid in preventing the development of diabetes, and by its general tonic effect it is a valuable help in preventive medicine. The experimental and clinical data are so definite and convincing with regard to the value of ultraviolet rays in deficiency diseases of children that there can no longer be any doubt as to the practical value of this form of treatment.

Heliotherapy for Extrapulmonary Tuberculosis.—It is the general consensus of opinion that natural heliotherapy is of greater therapeutic value than any of the other types of more concentrated ultraviolet radiations. Unfortunately, however, in the eastern part of the United States there is a considerable period in the year during which the sun does not shine or is so weak as to be of little practical value. In Philadelphia this period extends roughly from the first of November to the first of March, but varies somewhat in different years. During this period some substitute source of radiant energy is desirable. This source should approximate as closely as possible the sun in its distribution of energy. In Ellison's opinion, no source of energy at present available entirely satisfies these requirements, but one of the various types of open carbon arcs is the best that can be secured. In using such a source indoors during the winter, all too often the other great factor in heliotherapy, cool fresh air, is entirely neglected, and the treatment room is hot and stuffy and full of the odors of electrical machinery and perspiring humanity. Half the possible value of treatment is lost under such conditions. An adequate source of radiant energy used in a properly ventilated treatment room, while not producing the results obtained in the summer, still is capable of holding any ground gained during the summer and even adding a little to it, as can be seen by the improvement in those patients starting treatment under artificial conditions. If a mercury vapor burner is the only source of ultraviolet radiation available, better results can be obtained by reinforcing it with some source producing visible light and some infra-red rays. Ellison stresses the point that heliotherapy can be profitably used at a low altitude and close to a large city. The results obtained in extrapulmonary forms of tuberculosis in children justify its more extensive use.

Extensive Gangrene of Stomach.—In Armitage's case the anterior wall of the stomach was almost entirely gangrenous. The gastrohepatic omentum was gangrenous. In the center of the gangrenous area was a large perforation, and close to it another. These holes had extremely thin walls which were ragged and irregular, appearing to be disintegrated spots in the gangrenous area. Toward the cardiac end of the stomach beyond the black area, the wall was mottled with black spots. The mucosa on the posterior wall appeared dark red, not brightly congested. A resection was possible, so the gangrenous area was quickly whipped over with catgut. Death followed a few hours after operation. The cause of the gangrene was not discovered. The patient, aged 19, apparently had been entirely well until the evening before operation when she was taken ill suddenly, first with pain in the abdomen, then nausea and later constant vomiting. Food was not an etiologic factor in the case.

California and Western Medicine, San Francisco

28: 595-738 (May) 1928

Narcotics. P. T. Phillips, Santa Cruz.—p. 627.
Statistical Studies and Medical Efficiency. C. E. Phillips, Los Angeles. —p. 631.
Tuberculous Cavities: Their Diagnosis by Roentgen Ray. M. L. Pindell, San Fernando.—p. 633.
Postural Defects — Correctable in School Physical Education Classes. W. A. Clark, Pasadena.—p. 636
*Councilmania Lafleuri. R. J. Pickard, San Diego.—p. 639.
*Aberrant Renal Artery. F. Farman, Los Angeles.—p. 645.
Chest Signs Simulating Active Pulmonary Tuberculosis. E. A. Montague, Livermore.—p. 648.
Plastic Surgery of Face. J. P. de River, San Francisco.—p. 651.
Thought, Ideas and Functional Symptomatology: Attempt to Discover Organic Basis Therefor. R. Moore, Los Angeles.—p. 655.
*Significance of Pulpless Teeth. J. M. Lacey and C. R. Johnson, Los Angeles.—p. 658.
Dietetic Considerations in Treatment of Obesity. F. S. Modern and G. E. Johnson, Arrowhead Springs.—p. 660.
Technic of Laryngectomy. H. B. Graham, San Francisco.—p. 666.
Lure of Medical History: Contributions of America to Surgery: I. Account of Surgical Accomplishments of Over One Hundred Pioneers in American Surgery. H. M. F. Behneman, San Francisco. p. 668.
Xanthoma Diabeticorum: Case. F. H. Stibbens, Oakland.—p. 673.
Acute Angioneurotic Edema of Larynx: Case. B. Katz, Los Angeles. —p. 673.
New Glass Drainage Tube for Suprapubic Prostatectomy. L. L. Riggin, Pasadena.—p. 675.

Councilmania Lafleuri.—Among twenty-two patients with protozoal infections in whom Pickard made an examination of the feces there were three with *Councilmania.* In all three the amebas were numerous, both motile and encysted. In all three cases motile amebas with ingested blood cells were frequent.

Aberrant Renal Artery.—Farman reports a case of hydronephrosis in which the ureter was distorted or kinked by a large aberrant inferior polar artery coming from the aorta which

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hooked back of the ureter. There was a definite thickening, sclerosis and narrowing of the ureter (stricture) at the site of compression by the anomalous artery. The aberrant blood vessel was severed and ligated, the kidney replaced, and closure made, a drain being left to the perirenal space. Recovery from the operation was rapid (the patient was in the hospital twelve days), and resulted in prompt and complete relief from symptoms, for the most part of an intermittent colicky character.

Significance of Pulpless Teeth.—Judging from clinical results obtained by them, Lacey and Johnson contend that the removal of all pulpless teeth, and of all teeth showing extensive infection of the gingiva and alveolar margins, is entirely warranted as a prophylactic, palliative and curative measure.

Journal of Immunology, Baltimore

15: 191-297 (May) 1928

•"Toxins" of Hemolytic Streptococci: I. Relationship of Toxins of Different Hemolytic Streptococci. K. Ando, K. Kurauchi and K. Ozaki, Dairen, East Africa.—p. 191.
Id.: II. Neutralization Tests with Antitoxic Serums. K. Ando and K. Kurauchi, Dairen, East Africa.—p. 217.
Antigenic Properties of Ultraviruses: I. Introductory Remarks. E. W. Schultz, Stanford University, Calif.—p. 229.
Id.: II. Vaccinia Virus. E. W. Schultz, L. T. Bullock and F. Lawrence, Stanford University, Calif.—p. 243.
Id.: III. Rabies Virus. E. W. Schultz, L. T. Bullock and H. V. Brewer, Stanford University, Calif.—p. 265.
Effect of Chloroform on Immunizing Action of Vaccine Virus. F. Duran-Reynals, New York.—p. 283.
Pasteurella Avicida Vaccination by Oral, Subcutaneous and Intravenous Methods. L. Barnes, Pullman, Wash.—p. 289.

Toxins of Hemolytic Streptococci.—The work done by Ando et al. proved that hemolytic streptococci isolated from pathologic foci, scarlatinal and nonscarlatinal, produce a toxic principle capable of evoking a cutaneous reaction in human subjects. Production of toxin varies considerably according to strains. The effectiveness of the toxin for both the Dick test and preventive immunization depends largely on the selection of suitable strains. It seems to be reasonable to use polyvalent toxin made by mixing toxins of several strains which are most potent in strength and inclusiveness.

Journal of Laboratory & Clin. Medicine, St. Louis

13: 709-806 (May) 1928

Oral Administration of Pollen. J. H. Black, Dallas, Texas.—p. 709.
Metaplasia in Neoplastic Diseases. H. D. Caylor, Rochester, Minn.—p. 714.
Organism (B. Hoffmanni) Which Produces Specific Lesions in Stomach and Duodenum and Intradermal Test, Relative to Chronic and Latent Infections. A. Hoffmann, Anaheim, Calif.—p. 718.
Large Diffuse-Margin Plaque of Sewage Filtrate. O. Goodwin and J. Caldwell, Dallas, Texas.—p. 724.
•Barbital in Parathyroid Tetany. L. B. Brannon and C. A. Dragstedt, Chicago.—p. 732.
•Intermittent Partial Heart-Block. W. D. Reid, Boston.—p. 734.
Morphine Tolerance: I. Acquirement, Existence and Loss of Tolerance in Dogs. A. W. Downs and N. B. Eddy, Edmonton, Alta.—p. 739.
Id.: II. Susceptibility of Morphine Tolerant Dogs to Codeline, Heroin and Scopolamine. A. W. Downs and N. B. Eddy, Edmonton, Alta.—p. 745.
Some New and Improved Tests for Morphine and Related Alkaloids. C. C. Fulton, Omaha.—p. 750.
Normal Serum Calcium Content of Man. J. H. Roe and B. S. Kahn, Washington, D. C.—p. 762.
Connection with Reading Results of Precipitation Test. H. Silvette, Richmond, Va.—p. 764.
Isolation of Yeasts and Molds. G. A. Hill, Belmont, Calif.—p. 765.
Modified Wright's Technic for Standardization of Vaccines. L. W. Parr, Beirut, Grand Liban, Syria.—p. 767.
Container for Feces. E. M. Watson, London, Ont.—p. 768.
Clinical Test for Urinary Acetone and Diacetic Acid. J. A. Behre, Cincinnati.—p. 770.
Rapid Technic for Multiple Typing of Blood by Macroscopic Agglutination Method. A. T. Brice, Jr., Florence, S. C.—p. 773.

Barbital Controls Parathyroid Tetany.—Brannon and Dragstedt found that parathyroid tetany may be relieved or controlled by the adequate administration of barbital without any material change in the level of the blood calcium. The life of the parathyroidectomized dog can be slightly prolonged when tetany is controlled in this way.

Intermittent Partial Heart Block.—A case of partial heart block with considerable variation in the length of the P-R interval, and occasional reduction to a normal duration spontaneously, after atropine, and immediately after exercise, is reported by Reid. The history and physical examination did not give any evidence of abnormality; the patient apparently was in good health.

Medical Journal and Record, New York

127: 521-580 (May 16) 1928

Study of Sigmoid. H. J. Bartle, Philadelphia.—p. 521.
Urinary Extravasation at Varying Levels: Sixteen Cases. S. Wallenstein, Baltimore.—p. 525.
Motor Paralysis of Individual Nerve Trunks Following Administration of Prophylactic Serum. A. Gordon, Philadelphia.—p. 530.
Backache. J. W. Shuman, Los Angeles.—p. 532.
Tragedy of Neglected Dark Field Examination in Diagnosis of Syphilis. S. Halpern, New York.—p. 533.
Modern "Cynical" Dermatology. E. W. Abramowitz, New York.—p. 535.
Medicine and Surgery of Lewis and Clark Expedition. L. L. Stanley, San Quentin, Calif.—p. 536. (C'td.)
Where and Why Does Insulin Treatment Fail? G. Arany, Carlsbad, Germany.—p. 540.
Lash and Carry Apparatus Devised for Ninety Year Old Patient with Broken Leg. F. Griffith, Philadelphia.—p. 541.
Late Ectopic Pregnancy: Five Cases. H. Halsted, New York.—p. 543.
Pregnancy with Complications. A. N. Bessesen, Jr., and D. H. Bessesen, Minneapolis.—p. 547.
Hemorrhage from Nonpregnant Uterus. B. Mann, Philadelphia.—p. 548.
Pregnancy with Intact Hymen. A. Stein, New York.—p. 550.
Appendicitis Complicating Pregnancy. G. I. Miller, New York.—p. 552.
Kielland Forceps vs. Axis Traction Forceps. S. P. Goldberg, New York.—p. 553.
Placenta Praevia in Successive Pregnancies as Complication of Exophthalmic Goiter. D. Deutschman, New York.—p. 555.
Medical Life of Rabelais. D. W. Montgomery, San Francisco.—p. 559.
Jew in Medicine. H. Goodman, New York.—p. 562.

Minnesota Medicine, St. Paul

11: 279-362 (May) 1928

Inguinal Hernia: Its Repair. S. R. Maxeiner, Minneapolis.—p. 279.
Intrathoracic Goiter. N. J. Maclean, Winnipeg.—p. 286.
Perinephritic Abscess. H. C. Habein, Rochester.—p. 292.
Treatment of Nonmalignant Hypertrophy of Prostate. G. J. Thomas and E. W. Exley, Minneapolis.—p. 297.
Diagnosis of Renal Tuberculosis. E. Z. Shapiro, Duluth.—p. 301.
Carcinoma of Colon. G. Schwyzer, Minneapolis.—p. 307.
Otitic Thrombophlebitis. C. E. Connor, St. Paul.—p. 313.
Diathermy and Physical Agents in General Practice. H. J. Kooiker, Albert Lea.—p. 317.
Toxemia of Pregnancy: Two Dissimilar Cases. M. S. Sichel, Minneapolis.—p. 323.
Streptococcus Infection of Penis: Case. E. Bratrud, Warren.—p. 326.

Northwest Medicine, Seattle

27: 213-260 (May) 1928

Upper Urinary Tract: Surgical Lesions. V. C. Hunt, Rochester, Minn.—p. 213.
Obstruction of Vesical Orifice. W. J. Pennock and W. J. Stark, Spokane, Wash.—p. 220.
Use of Lipiodol as Diagnostic Aid in Gynecology. A. Mathiew, Portland, Ore.—p. 222.
Prolapse Following Hysterectomy: New Technic for Its Repair. D. R. Knapp, Danbury, Conn.—p. 226.
Craniorrhachischisis. M. S. Sichel, Minneapolis.—p. 229.
Anorexia Nervosa: Hypoglycemia or Hypo-Adrenia. C. S. Leede, Seattle.—p. 233.
Swimming Pool Pathology. R. A. Fenton, Portland, Ore.—p. 238.
•Bacterial Factor in Goiter. E. O. Houda, Tacoma, Wash.—p. 240.
Home Care of Diabetic Patients. C. F. Kemper, Denver.—p. 242.
History Taking. P. Nelson, Idaho Falls.—p. 245.
Broncholithiasis. J. F. Scott, Yakima, Wash.—p. 247.

Bacterial Factor in Goiter.—Houda says that the usual organism found in goiter tissues in the vicinity of Tacoma is a gram-positive pleomorphic coccus. Limited confirmations in hand, from widely separated districts of the United States, leave little doubt of a bacterial factor, the ubiquity of which may be later established. The postoperative treatment with antigen of autogenous construction, followed by the early cleaning up of the usually protracted residual signs in the toxic types of goiter, leaves little question as to the infectious origin of the disease. The prevention of recurrences is anticipated by steps directed against this specific cause, rather than by limiting attention to its effects, the goiter.

Oklahoma State M. Association Journal, Muskogee

21: 101-136 (May) 1928

Summer Diarrheas in Children. C. M. Pounders, Oklahoma City.—p. 101.
Feeding of Older Infants. M. R. Woodward, Sherman, Texas.—p. 103.
Foreign Bodies in Air Passages. J. C. Braswell, Tulsa.—p. 105.
Seasonal Hay-Fever. R. M. Balyeat, Oklahoma City.—p. 106.
Schick Testing and Diphtheria Immunization in Muskogee County. C. F. Jordan, Muskogee.—p. 114.
Sketch of History of Surgery. R. H. Harper, Afton.—p. 116.

Public Health Journal, Toronto

19: 201-250 (May) 1928

Social Worker and Family Health. D. B. Armstrong, New York.—p. 201.
Diphtheria Toxoid (Anatoxine-Ramon). R. D. Defries, Toronto.—p. 210.
Quantitative Limitations of Reductase Test. J. H. Shrader and F. A. Korff, Baltimore.—p. 219.
School Medical Services, City of Vancouver. H. White, Vancouver, B. C.—p. 222.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

15: 533-715 (April) 1928

Epoch-Making Books in British Surgery: IV. Whole Course of Chirurgerie Compiled by Peter Lowe, Scotchman. D. Power.—p. 533.
*Peritoneal Lymphatic Absorption: Value of Lymphaticostomy. K. P. Brown.—p. 538.
Abnormal Mobility and Prolapse of Ascending Colon and Cecum in Causation of Various Abdominal Conditions: 242 Cases of Colopexy. R. B. Carslaw.—p. 545.
Cancer of Male Urethra: Two Cases. J. J. Robb.—p. 605.
Patella Cubiti: Case. G. Gunn.—p. 612.
Kummell's Disease: Posttraumatic Spondylitis. J. Cardis, G. F. Walker and R. H. Olver.—p. 616.
*Chronic Peptic Ulcer of Stomach with Acute Miliary Tuberculosis of Gastric Mucosa. H. Collinson and M. J. Stewart.—p. 626.
*"Paget's Disease" of Glans Penis. M. P. Susman.—p. 635.
Cellular Hyaline Transformation and Calcification in Subgluteal Lipoma. C. Gordon-Watson.—p. 641.
*Ossified Postrectal Recurrence from Rectal Cancer. C. Dukes, C. N. Morgan and C. Gordon-Watson.—p. 647.
*Carcinoma of Prostate: Intraspinal Route of Dissemination. O. W. Roberts.—p. 652.
*Diathermy Operations for Cancer of Tongue. W. D. Harmer.—p. 661.
Case of Osteomyelitis of Radius Treated by Bone Grafting. G. M. Gray.—p. 671.
*Spinal Meningioma Containing Bone. L. Rogers.—p. 675.
Dislocation of Elbow with Separation of Internal Epicondyle and Displacement of Latter into Joint Cavity. H. B. Walker.—p. 677.

Peritoneal Lymphatic Absorption.—Experiments made by Brown showed that the omentum plays little, if any, part in the actual lymphatic absorption from the peritoneal cavity. In three fatal cases of peritonitis in which the anterior mediastinal glands showed no changes, the omentum was adherent to the anterior and lateral parietes, thus cutting off the diaphragm from the infected area. There is little absorption by way of the thoracic duct in cats and dogs. Lymphaticostomy cannot be recommended as a procedure holding out any hope to patients suffering from acute peritonitis.

Peptic Ulcer and Gastric Tuberculosis.—In a consecutive series of 10,000 autopsies, tuberculous ulceration of the stomach was present in three cases only, and in two of these it was due to involvement from without by adjacent tuberculous lymph glands. In a series of 320 partial gastrectomies in which the specimens were submitted to microscopic examination, none was the seat of tuberculous ulceration; but in two which are reported by Collinson and Stewart, a simple chronic ulcer was associated with scattered miliary tubercles throughout the mucosa, while in a third, also described, typical "carcinoma ex ulcere" coexisted with a lesion at least strongly suggestive of tubercle.

Paget's Disease of Glans Penis.—Susman reports one case and briefly reviews thirty-four extramammary cases already on record. The external genital region was affected in fourteen of these, the glans penis being the site in seven (counting the present case).

Repeated Recurrences of Rectal Cancer.—The points of chief interest in the case reported by Dukes et al. are the repeated recurrence in the perineum of a malignant tumor presumably secondary to a rectal cancer removed five years previously, and the existence of extensive ossification within this recurrence.

Intraspinal Dissemination of Carcinoma of Prostate.—The suggestion is advanced by Roberts that there is an intraspinal pathway, consisting of the spinal laminae with their ligaments and the lymph spaces connected with these structures, which plays a very important rôle in the dissemination of carcinoma of the prostate, and which can account for the widespread metastases that are not infrequently seen in the upper part of the body in many of these cases. Three cases are reported.

Diathermy Operations for Carcinoma of Tongue.—The results that have been reported from the use of diathermy in the treatment of cancer of the tongue, Harmer says, are so encouraging that there can be no doubt that it is one of the best methods of treatment that has so far been devised. If the operation is properly carried out by the bloodless method, there is no danger of disseminating the growth. Certainly it is easier to operate by this means than with the knife. The treatment can be carried out in a shorter time, and there need not be any handling of the tissues. Complications are also less frequent than after cutting. Thus, there is less shock and toxemia. The absence of pain is remarkable, and allows of easier swallowing. The sloughing that results is harmless. Many cases which would be considered inoperable by ordinary means can be relieved, if not cured, by the method — in fact, it may be the only means of sterilizing a painful septic sore. Even if life is not prolonged, the existence of the patient may be rendered more bearable.

Spinal Meningioma Containing Bone.—The evidence of true bone formation in a spinal endothelioma presented by Roger's case serves to emphasize the essential similarity of the cranial and spinal meningiomas. The tumor was situated on the right posterior aspect of the cord, at the level of the ninth thoracic vertebral body. It was found to consist of a very hard core surrounded by fleshy-looking lobulated masses similar to those usually seen in spinal endotheliomas.

British Journal of Tuberculosis, London

22: 49-100 (April) 1928

*Rôle of Glass in Relation to Light Treatment. F. E. Lamplough.—p. 49.
Tuberculosis and Sailor. J. E. Wood.—p. 57.
Meteorologic Observations at Tuberculosis Sanatoriums. A. N. Robertson.—p. 62.
*Tuberculin Dispensary. W. C. Wilkinson.—p. 65.

Rôle of Glass in Relation to Light Treatment.—Admitting that ultraviolet treatment in conjunction with good nursing is rightly regarded as the sovereign remedy for surgical tuberculosis, Lamplough warns that the pulmonary disease is the most important of the very few conditions in which great discrimination is required in determining whether this remedial treatment may suitably be employed. When exposure to the ultraviolet rays of natural light is considered desirable, whether direct sunlight is used or the comparative coolness of the radiation from the north sky, a glass transparent to such rays enables treatment to be given in open or closed wards without the great inconveniences associated with exposure carried out entirely in the open.

Value of Tuberculin Dispensary.—Wilkinson asserts that only 10 per cent of tuberculous patients can be cared for in sanatoriums and that the treatment is costly. The cost of sanatorium treatment for a tuberculous patient is probably ten times as great as that for the care of the patient at a tuberculin dispensary, and the ultimate individual results of treatment at a tuberculin dispensary are considerably better. The tuberculin dispensary system appeals both to the self-interest and to the intelligence of the patient, and can automatically keep the physician in touch with patients not only during treatment but for the purpose of after-examination and after-care. Moreover, management of cases under this system, with the essential cooperation of district nurses, who visit the patients in their own homes, seems to afford the best means of putting into practice those measures of prophylaxis which can be readily taught and learned in the home. Furthermore, in the majority of cases of simple chronic pulmonary tuberculosis (uncomplicated with mixed infections) it is not necessary for patients to give up their work. The tuberculin dispensary is designed to reduce to a miniumum the amount of time lost by the necessarily frequent visits of the patients. The tuberculin dispensary system is comprehensive. Indeed, it is the one and only all-inclusive system which is of any real value in the treatment of chronic forms of tuberculosis in the poorer sections of society, especially in cities and large towns. Where other systems, such as artificial pneumothorax, may help tens, and sanatoriums may help hundreds, the tuberculin dispensary system can be of service to tens, hundreds and thousands.

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Journal of State Medicine, London

36: 249-310 (May) 1928

*Tests for Drunkenness, Particularly in Relation to Motor Accidents. G. Carter.—p. 249.
Medicolegal Aspects of Jewish Life. W. M. Feldman.—p. 264.
Prevention of Ringworm. N. G. Hill.—p. 276.
Mortality of Children and Mothers in India. S. N. Mallik.—p. 281.
Physical-Meteorological Observatory at Davos. F. Lindholm.—p. 291.

Tests for Drunkenness.—Carter suggests that examination of the urine for alcohol, as a guide to the amount of liquor which has been consumed in any particular case, forms a part of routine examination. He refers to Southgate's studies. He found that following the ingestion of alcohol it was noted in the blood soon afterward, and in increasing amount up to one and one-half hours after the drink had been taken. From then it began to decline at the rate of about 12 mg. per hour, until all trace had usually disappeared in about twelve and one-half hours after consumption. The blood content was found to be about 148.7 mg. of alcohol in 100 cc. at the point of maximum concentration. There was a higher percentage in the urine, showing that the renal epithelium has a selective action for alcohol, and a low kidney threshold. Results proved that one part of alcohol in the blood gave 1.35 in the urine secreted at any given time. Furthermore, the alcoholic secretion into the urine is a constant factor and is independent of its concentration. The presence of food in the stomach delayed the absorption of alcohol, especially if that food was bread and milk, which is a point to bear in mind in treating alcoholism.

Lancet, London

1: 843-896 (April 28) 1928

Radium in Treatment of Malignant Disease. G. E. Gask.—p. 843.
*Treatment of Pernicious Anemia with Liver and Liver Extracts. S. Davidson, J. G. McCrie and G. L. Gulland.—p. 847.
Clubfoot: Nature and Treatment. A. W. Adams.—p. 852.
Infection of Meninges and Blood Stream by B. Mucosus-Capsulatus. W. R. Brain and F. C. O. Valentine.—p. 855.
Two Tests (Wobbe) for Impurities in Anesthetic Ether. E. B. Robinson.—p. 856.
*Unusual Case of Appendicitis. W. A. Taylor.—p. 857.

Value of Liver Extracts in Pernicious Anemia.—Davidson et al. endorse the value of liver and liver extract in the treatment of pernicious anemia. It appears to be immaterial to the success of the treatment whether the patient is in his first attack or has suffered several relapses. It seems to be a matter of indifference whether the patient is treated with liver or with the liver extracts. All the latter seem to be efficacious, and it will be a matter of personal liking and convenience whether liver or the extract is chosen for treatment. Is the treatment free from risk? In the great majority of cases it certainly is. Nothing more serious than an occasional temporary diarrhea is likely to occur, and this can be dealt with by stopping fruit and vegetables for a few days. But it is to be noted that renal complications may arise, though their connection with liver treatment is not definitely proved. In pernicious anemia the kidneys as seen at postmortem are never normal, but this is hardly ever evidenced by albuminuria. In cases showing a persistent leukocytosis, it would probably be wiser to trust to liver extract alone, which does not contain protein, and not give the large quantities of red meat advocated in Minot's original diet. Minot has formed the opinion that the nervous symptoms are not benefited by liver treatment, except that so far as the muscles become stronger, the patient can walk better. The authors are inclined to differentiate a little more. It seems to them that in cases in which the symptoms are of the tabetic type very marked improvement may occur, but in cases of the spastic type, so far, they either have not seen any improvement or have noted a distinct increase of spasticity, possibly because the muscular tone is increased.

Nut in Appendix.—The appendix in Taylor's case was found to contain an intact barcelona nut, of full size, and showing indentations caused by teeth.

Quarterly Journal of Medicine, London

21: 359-458 (April) 1928

*Studies of Insulin-Resistant Diabetic. R. D. Lawrence.—p. 359.
Pulmonary Ventilation and Oxygen Consumption in Pulmonary Tuberculosis: Effect of Respiratory Quotient. R. Williamson.—p. 371.
Clinical Importance of Variations in Number of Cusps Forming Aortic and Pulmonary Valves. G. M. Wauchope.—p. 383.
*Creatine and Rigidity. M. Hirst and C. G. Imrie.—p. 401.
*"Congenital" Aneurysm of Cerebral Arteries. F. H. K. Green.—p. 419.
Rat-Bite Fever. E. N. McDermott.—p. 433.

Insulin Resistant Diabetes.—A case of insulin resistance in a young diabetic man is described by Lawrence. The diabetes was severe from the onset in 1925, but was controlled by 40 units of insulin a day and a diet of 35 Gm. of carbohydrate, 38 Gm. of protein and 83 Gm. of fat. The fall in blood sugar after insulin was normal at this time. A year later he required 100 units on the same diet, and six months later he was excreting from 5 to 10 Gm. of sugar on a diet of 60 Gm. of carbohydrate, 80 Gm. of protein and 150 Gm. of fat, with 220 units of insulin, dextrose equivalent of 1 Gm. per two units. When insulin was omitted he went into coma, so that insulin did affect him, although to an unusually small degree. None of the usual factors, such as sepsis, which make diabetic persons resistant to insulin was present in this case. Blood sugar studies showed features quite different from those of the ordinary patient with severe diabetes. The blood sugar was lowest after a night's fast, and when carbohydrate was given the blood sugar rose in spite of large doses of insulin. This was not due merely to a delayed insulin action or to lack of absorption, because insulin, given in the fasting condition, reduced the blood sugar at the usual rate, though to a less degree than in a normal diabetic person. It appears, therefore, in this case, that insulin cannot deal with ingested carbohydrate in the usual way, by storing it as glycogen. Further evidence that the patient had little or no store of carbohydrate was obtained by starving him, when the blood sugar fell spontaneously instead of rising, as in the usual case of severe diabetes when insulin is withheld. It is suggested that in this case insulin failed to store glycogen normally, but that it did have its other action of checking the new formation of sugar and ketones from endogenous protein and fat. It seems probable, therefore, that in this patient a factor other than insulin was lacking, perhaps some co-enzyme which is necessary to the usual action of insulin in forming glycogen.

Creatine and Rigidity.—Hirst and Imrie assert that in subjects manifesting marked degrees of parkinsonian rigidity, creatinuria occurs regularly. The amount excreted by the patients examined, expressed as a fraction of the body weight appears to be related to the degree of rigidity. The rate of excretion is lowest during the night, when the muscular system is inactive. After single doses of creatine (18 Gm.), rigid patients excrete less of the ingested creatine than do normal subjects. Creatine in large doses increases the output of creatine both in rigid cases and in normal subjects.

Congenital Aneurysm of Cerebral Arteries.—Green describes three cases of spontaneous subarachnoid hemorrhage due to rupture of saccular aneurysms on branches of the circle of Willis. Two of the patients were young (aged 21 and 30, respectively). The third was aged 49, but she showed comparatively little evidence of arteriosclerosis. In each case a syphilitic or mycotic origin for the aneurysms could practically be excluded, both on clinical and on pathologic grounds. No history of old or recent trauma to the head was elicited. One of the patients showed, postmortem, in addition to three cerebral aneurysms, cardiovascular maldevelopments in the form of coarctation of the aortic isthmus, a bicuspid aortic orifice, and fenestration of the mitral cusps.

Tubercle, London

9: 357-404 (May) 1928

*Complication in Artificial Pneumothorax Treatment. M. Gerber.—p. 357.
Pathology of Pulmonary and Bronchial Gland Tuberculosis in Infancy and Childhood. P. F. Armand-Delille and C. Lestocquoy.—p. 359.

Subdiaphragmatic Accumulation of Air in Case of Artificial Pneumothorax.—In Gerber's case, owing to the presence of adhesions, attempts at performing an artificial pneumothorax proved futile and elicited much pain in the upper part of the abdomen, especially when the patient tried to sit up. On roentgen-ray examination it was found that the air had been introduced below the diaphragm instead of above it, and lay in the subdiaphragmatic space. Seven days after the insufflation of air below the diaphragm the air was completely absorbed, and the diaphragm had regained its normal position.

Bulletin de la Soc. d'Obst. et de Gynéc., Paris

17: 203-342 (March) 1928

Cancer of Cervix After Supravaginal Hysterectomy. J. Gagey.—p. 203.
*Partial Retention of Placenta. Desnoyers and Digonnet.—p. 207.
Fatal Torsion of Umbilical Cord. Le Lorier.—p. 211.
Fatal Strangulation of Umbilical Cord. Ravina.—p. 211.
*Treatment of Grave Anemia of Pregnancy. Devraigne and T. Laennec. —p. 213.
Hereditary Transmission of Tuberculosis. C. Mönckeberg.—p. 217.
Pyelitis of Pregnancy. F. H. de Beaufond.—p. 219.
Double Uterus: Case. Bryskier and C. Béclère.—p. 223.
Normal Pregnancy in Double Uterus. Brindeau and C. Béclère.—p. 226.
Roentgenologic Diagnosis of Bicornate Uterus. P. Brocq and C. Béclère. —p. 227.
Instrument for Injecting Lipiodol into Uterus. P. Petit-Dutaillis.—p. 228.
Ovarian Homeo-Opotherapy. J. Seguy.—p. 231.
Five Cases of Shoulder Presentation. Ciaudo and Bona.—p. 233.

Partial Retention of Placenta with Late Manifestations.—Desnoyers and Digonnet report a case of prolonged, partial retention of the placenta in a primipara, aged 33. Both the birth of the child and the birth of the placenta were normal, but the postpartum course was marked by slight fever. On the eleventh day there occurred a slight hemorrhage accompanied by the spontaneous expulsion of a blood clot in which a fragment of placenta, the size of a hazelnut, was found. This expulsion was followed by a rise in temperature. A careful digital intra-uterine exploration was made and a fairly large piece of placenta was removed. That night the patient had a violent chill, the temperature rose to 40.6 C. and the pulse rate increased to 120. On the fifth day following the digital curettage, abdominal hysterectomy was performed; the patient died on the operating table. This case illustrates particularly well the danger of intra-uterine manipulations.

Liver Treatment in a Case of Grave Anemia of Pregnancy.—Devraigne and Laennec report two cases of pregnancy anemia of a grave type. One of the patients was given two blood transfusions and repeated injections of dextrose. She would not consent to a therapeutic abortion, but a few days afterward, spontaneous abortion of a fetus weighing 220 Gm. occurred. The patient died three days later. The second patient received three blood transfusions and in addition was given 250 Gm. of slightly cooked beef liver daily. Under this treatment her condition showed marked improvement and three months later she gave birth to a living child. The authors attribute the increase in erythrocytes in twenty-five days from 1,800,000 to 5,000,000 to a large extent to the liver diet.

Presse Médicale, Paris

36: 529-544 (April 28) 1928

*Phrenicopupillary Syndrome in Pleuropulmonary Diseases. E. Sergent and P. George.—p. 529.
Basal Metabolism in Asthma. J. Galup.—p. 531.
Method for Determining Dosage in Actinotherapy. J. Saidman.—p. 534.

Phrenicopupillary Syndrome in Pleuropulmonary Diseases.—Sergent and George call attention to the fact that the phrenic nerve and the iridodilator fibers of the sympathetic are involved with relative frequency in the course of various pleuropulmonary diseases, particularly pulmonary tuberculosis. The signs which result from these involvements are of value in localizing the underlying pathologic processes. Most important of all these indirect signs are the oculopalpebral and diaphragmatic disturbances. They may occur alone or in association. When associated, they produce the phrenicopupillary syndrome, which is variable. Thus one may observe a spasmodic mydriasis, a paralytic myosis or a Claude Bernard-Horner syndrome, associated with a paralysis of the phrenic, which can even be accompanied by other signs of the mediastinal series, such as recurrent paralysis. The phrenicopupillary syndrome may be observed in any of the pleuropulmonary diseases, but is seen principally in the course of tuberculosis. It is of great diagnostic value in the cases in which the physical signs of the underlying disease are vague or still latent. Under all circumstances, it is of importance in determining the exact topography and extent of the lesions observed or suspected.

36: 545-560 (May 2) 1928

Hypertrophic Osteodermopathy. M. Labbé and P. Renault.—p. 545.
Egyptian Splenomegaly. P. Petridis.—p. 546.
*Preventive Vaccination Against Scarlet Fever. H. Sparrow.—p. 549.

Immunization Against Scarlet Fever.—Sparrow concludes that antiscarlet fever immunization has an undeniable, constant influence on the morbidity of scarlet fever. The percentage of morbidity in both the immunized and the nonimmunized decreases with age. It is influenced by the amount of toxin injected. On the average, the nonimmunized furnish from three to four times as many cases as the immunized of the same age.

Revue Française d'Endocrinologie, Paris

6: 1-101 (Feb.) 1928

*Action of Ingested Thyroid on Thymus, Testis and Thyroid. R. Courrier. —p. 10.
Hyperchromatism Resembling Addison's Disease in a Case of Exophthalmic Goiter. G. Etienne and G. Richard.—p. 49.
Effect of Ergotamine Tartrate in Exophthalmic Goiter and in Hypersympathicotonia. Laroche, Camus and Lelourdy.—p. 52.
Pathogenesis and Treatment of Gynecomastia. N. A. Schereschewsky. —p. 57.

Action of Ingested Thyroid on Thymus, Testis and Thyroid.—From experiments carried out over a period of years, Courrier concludes that ingested thyroid has a definite action on the thymus and thyroid but not on the testis. The reaction of the thymus to thyroid treatment varies, depending on whether the subject is in a state of positive or of negative balance. In subjects in negative balance, atrophy of the thymus caused by the general denutrition is noted. In subjects in positive balance the thymus is always found to be larger than the thymus of control animals of the same age. The author therefore considers it a mistake to treat pathologic hypertrophy of the thymus with thyroid preparations, because, if the patient is in positive balance, the thymus will hypertrophy all the more. Some authors have attributed exophthalmic goiter to hypertrophy of the thymus and have recommended thymectomy in the treatment of this condition, but Courrier thinks they have mistaken cause for effect, since his experiments show that thyroid given per os causes hypertrophy of the thymus. Although different investigators have observed different effects produced on the testis by the ingestion of thyroid, Courrier is convinced that these effects resulted from deficient nutrition and that, if the animals are maintained in positive balance, thyroid treatment has no harmful action on the function of reproduction. Hyperthyroidization rendered the thyroid gland inactive, as shown histologically by the presence of large, obviously nonfunctioning confluent vesicles with very flat epithelium containing little cytoplasm. If the thyroid treatment is continued, involution of the gland, with disappearance of the vesicles and persistence of masses of epithelial cells, occurs.

Revue Médicale Française, Paris

9: 178-264 (March) 1928

Treatment of Purulent Pleurisy. P. Delbet.—p. 183.
Treatment of Puerperal Infection with Aseptic Pus. Devraigne, Sauphar and Laennec.—p. 195.
*Phlyctenotherapy in Myopathies. J. Tinel.—p. 203.

"Phlyctenotherapy" in Myopathies.—Tinel reports favorable results in twelve cases of various forms of myopathy treated by "phlyctenotherapy." The method is as follows: a cantharides blister is produced on the patient's abdomen, and from 5 to 12 cc. of serum is aspirated from it. This is injected subcutaneously into the thigh, the operation being repeated every seven, ten or fifteen days. The treatment may be kept up for months or years, if necessary. Eight out of the twelve cases have shown marked improvement.

Annali d'Igiene, Rome

38: 185-272 (March) 1928

*Autogenous Vaccines, Irradiated with Radium, Applied to Malignant Tumors. G. Tizzoni and G. De Angelis.—p. 185.
Aspecificity in Vaccination and Therapeutic Methods in Which Bacterial Filtrates are Employed. C. Ninni and G. Molinari.—p. 196.

Autogenous Vaccines, Irradiated with Radium, Applied to Malignant Tumors.—In several series of experiments with rats, the authors found that under the influence of the respective therapeutic vaccine, previously exposed to radium for twenty-four hours, the direct immunity conferred was of the highest degree. They secured 100 per cent of positive results, or perfect immunity, on later injection of highly virulent cancer material into the experimental animals. The immunity was demonstrable ninety-three days after the date of the inoculation. Shorter exposure of the vaccine than twenty-four hours proved inadequate.

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Clinica Ostetrica, Rome

30: 173-228 (April) 1928

*Puerperal State as Pathogenic Factor in Intermittent Hydronephrosis. F. Clauser.—p. 173.

Puerperal State as a Pathogenic Factor in Intermittent Hydronephrosis.—Clauser relates a case to show that the puerperal state may be the cause of grave, permanent changes in the ureters, such as strictures and rigid kinking, and that these may occur whether the infection attacks the uropoietic organs directly in the form of pyelo-ureteritis followed by periureteritis ending in stricture, or whether the infection involves first the genital apparatus and extends thence to the lymph paths and through them to the ureters.

Clinica Pediatrica, Modena

10: 129-191 (March) 1928

Semeiology of Syphilitic Bone Disease in Infants. M. Péhu.—p. 129.
*Probable Significance of Eosinophilia in Infantile Chorea. E. Fanton. —p. 137.
Amaurosis of the New-Born and the Infant With or Without Ophthalmoscopic Signs. P. Valentini.—p. 151.
*Influence of Ultraviolet Irradiation on Nitrogen Exchange in Children. U. Ferri.—p. 159.

Significance of Eosinophilia in Infantile Chorea.—In infantile chorea, and also in certain types of convulsions of autotoxic origin, hypereosinophilia is frequently noted (in the cases Fanton discusses, in from 6 to 14 per cent). The eosinophilia of chorea is closely related to the type of the disease, being evident in the earliest stage, independent of any therapeutic influence. Such eosinophilia is probably due to the accumulation in the organism of toxic substances, intermediate products of the decomposition of protein substances (purine bases), resulting from a defective or altered functioning of the parathyroid glands (theory of Simonini on the pathogenesis of chorea). The relation between eosinophilia and retention of purine bases is shown by (1) the presence of enormous quantities of guanidine bases in the urine of children affected with chorea, or other types of convulsions of an autotoxic nature; (2) the fact that the substitution of a meat diet for a vegetable diet in chorea increases both the guanidine in the urine and the hypereosinophilia in the circulating blood, and (3) the fact that, when guanidine is injected into animals, an evident eosinophilia is induced, which is in direct proportion to the amount of guanidine injected and the time interval that has elapsed since the injection was made.

Influence of Ultraviolet Irradiation on Nitrogen Exchange in Children.—Ferri's experiments were conducted with five children, from 4 to 7 years of age, who were in a good nutritional condition. During the whole period of observation, they were kept on a rigorously fixed diet, both qualitatively and quantitatively. The results of ultraviolet irradiation varied with the intensity of the treatment. The results observed in two subjects irradiated less intensely demonstrate that the organism, under the action of ultraviolet irradiation, may be stimulated so as to retain and to fix a larger quantity of nitrogen introduced with the food; and, inversely, in three children irradiated more intensely it became evident that the retention of nitrogen by the organism tended, during the period of irradiation, to diminish in the same proportion as the quantity of nitrogen eliminated by the urine increases, which shows the possibility of inducing an acceleration of nitrogen exchange.

Policlinico, Rome

35: 117-176 (March 15) 1928. Surgical Section

*Embolectomy. U. Bani.—p. 117.
*Filtrable Virus of Osteomyelitis. V. Jura.—p. 135.
Tumors of Horseshoe Kidney. G. Millul.—p. 164.

Embolectomy.—Bani declares that embolectomy is the method of choice for the treatment of disturbances due to emboli of the extremities. An embolus that causes disturbances in the circulation, unless there are absolute contraindications, should be removed by arteriotomy, because of the danger of gangrene through the subsequent formation of a thrombus. In order to avoid permanent changes in the vessel, the intervention should be made as early as possible. The operation may be performed under local anesthesia, with ordinary instruments and with temporary hemostasis. Before the arterial opening is sutured, the operator must assure himself that blood will spurt from the vessel, otherwise a sound must be employed and the thrombi must be removed with a spoon. It is desirable to immerse the instruments in a 2 per cent solution of sodium citrate. If the circulation is still impaired, other possible locations of an embolus must be sought, and the new embolus must be removed by a second embolectomy. To prevent the formation of a thrombus at the site of the suture, the threads may be oiled with petrolatum, or—better still—the intima need not be included in the suture. Only in very grave cases, and on refusal of intervention by the patient, may recourse be had to the Lindström method—the energetic application of massage and kneading for a long period.

Filtrable Virus of Osteomyelitis.—Jura reports that from cultures of certain micro-organisms (*Staphylococcus aureus, Staphylococcus albus*, Eberth's bacillus) isolated from typical cases of osteomyelitis, he obtained filtrates capable of reproducing osteomyelitic lesions in rabbits, whether injected into the veins or the bone marrow. The virus is destroyed by alkalis and by acids. It possesses antigenic properties, which are revealed by the complement deviation test applied to the blood serum of patients with osteomyelitis or of rabbits treated with the virus. Patients with osteomyelitis possess a specific cutaneous hypersensitiveness to the virus, as revealed by an almost immediate reaction to intracutaneous inoculation with it. There is not sufficient evidence to determine the point whether the filtrable virus is a phase in the life of the staphylococcus or Eberth bacillus, or whether these organisms are merely its host.

Archivos de Medicina, Cirugía y Espec., Madrid

28: 405-440 (March 24) 1928

Environment in the Production of Neuroses. J. Sanchis Banús.—p. 405.
Tuberculosis of Female Genital Organs. J. Torre Blanco.—p. 416.
Thermometric Measurements of Spinal Fluid. P. Scheff.—p. 422.
*Bilateral Pulsating Exophthalmos. M. Esteban.—p. 428.

Bilateral Pulsating Exophthalmos.—An aviator fell from a considerable height in 1922, and a diagnosis of fracture of the base of the skull was made. The patient was unconscious twenty days, and lost his memory. Pronounced bilateral exophthalmos developed. An operation, performed under paravertebral cervical anesthesia, was successful, so far as the pulsating exophthalmos is concerned. Not only the general appearance of the patient improved, but the congestion in the head disappeared.

Folha Médica, Rio de Janeiro

9: 89-100 (March 15) 1928. Partial Index

*New Technic for Study of Nerve Endings. B. Lobo.—p. 89.

New Technic for Study of Nerve Endings.—The method, found useful in periarterial sympathectomy, of obtaining adhesion of the plexus to the outer layer by injecting sterilized physiologic solution of sodium chloride, has been applied by Lobo to the study of the plexus, as well as the arteries, veins, etc. Very fine specimens have been obtained in this way.

Revista Médica Latino-Americana, Buenos Aires

13: 731-925 (Feb.) 1928. Partial Index

*Injection Treatment of Varicose Veins. C. Lugones.—p. 731.
Heart Failure. F. C. Arrilaga.—p. 744.
Tuberculosis: Surgical Treatment. R. A. Vaccarezza and J. L. Silvestre. —p. 778.
Ureteral Stones. J. A. Salaber.—p. 831.

Injection Treatment of Varicose Veins.—Lugones recommends only one injection at the first sitting even when there are varicose veins in both legs; after that, two may be given. In syphilitic patients, mercuric iodide is indicated. When quinine is used, one should prepare 40 per cent solutions of sodium salicylate and quinine, to be diluted in the syringe as desired.

Revista de Medicina y Cirugía, La Paz

4: 575-621 (Jan.) 1928. Partial Index

School Hygiene. C. A. Valenzuela.—p. 604.
*Typhoid Fever and Hysteria. J. A. Osorio.—p. 610.

Case of Typhoid with Hysteria.—Osorio's patient, a boy, aged 14, was suddenly seized by an infectious condition, apparently toxic. Blood analysis and the therapeutic test ruled out

malaria. Application of a typhoid-paratyphoid vaccine was followed by almost complete defervescence and disappearance of symptoms. The presence of pathognomonic symptoms indicated an associated meningitis which persisted after recovery from the typhoid. The child lost his speech for a day, but regained it, at first with difficulty.

Semana Médica, Buenos Aires

35: 557-620 (March 8) 1928. Partial Index

*Blood Serum of the New-Born. S. I. Bettinotti.—p. 562.
Phlorhizin Test in Diagnosis of Pregnancy. J. R. Diaz Nielsen.—p. 563.

Inorganic Phosphorus in the Blood of the New-Born.—Bettinotti made seventy quantitative determinations of the inorganic phosphorus in the blood serum of new-born infants. He did not find any differences that could be attributed to sex, weight or age. The average figure was 5.5 mg. per hundred cubic centimeters of serum.

Beiträge zur Klinik der Tuberkulose, Berlin

68: 671-833 (March 27) 1928

Importance of Free Research Institutes. L. Brauer.—p. 671.
*Tuberculosis and Oxygen. L. Lange.—p. 680.
*Immunity in Tuberculosis. R. Kraus.—p. 686.
*Asthma and Tuberculosis in Relation to Climatic Allergy. W. Storm van Leeuwen.—p. 703.
Metabolism of Tubercle Bacillus as Dependent on Oxygen and Carbon Dioxide. O. Kirchner.—p. 708.
Chemotherapy of Tuberculosis. F. Jessen.—p. 711.
Calmette's Vaccination Against Tuberculosis. H. L. Kowitz.—p. 714.
Processes of Healing in Pulmonary Tuberculosis. P. Huebschmann.—p. 718.
Does Pathologico-Anatomic Tuberculosis Research Need Conception of Allergy? F. Schürmann.—p. 723.
Tuberculous Superinfection in Human Skin. P. Wichmann.—p. 728.
Direct Culture of Tubercle Bacilli from Circulating Blood. K. Bingold.—p. 734.
*Influence of Seasons on Tuberculosis. Heerup.—p. 739.
Bilateral Artificial Pneumothorax. G. Liebermeister.—p. 746.
Course of Absorption of Vapors from Streaming Gas by Fixed Absorbents and Suitability of Active Charcoal and Silicic Acid Gel for Analytic Determination of Small Quantities of Vapor in Expired Air. W. Ponndorf and H. W. Knipping.—p. 751.
Spread of Tuberculosis in the Kirghiz Steppes. W. Koopmann.—p. 807.

Tuberculosis and Oxygen.—Lange suggests that the bovine tubercle bacillus is adapted to a relative paucity of oxygen, as compared with the human tubercle bacillus.

Immunity in Tuberculosis: Experiments with B C G.—Kraus' experiments on guinea-pigs and rabbits indicate that B C G possesses a certain virulence, but that the processes which it excites tend to remain localized and the lesions to disappear completely. It is too early, in his opinion, to give out the vaccine for general use in human beings.

Asthma and Tuberculosis in Relation to Climatic Allergy.—The most important climatic factor for asthma is dampness in walls and floors of houses. The dampness acts, not directly, but by furthering the increase of molds, yeasts and bacteria. Freedom from attacks was obtained by 75 per cent of more than 600 patients who slept and spent, perhaps, a few hours each day in allergen-free rooms; in a further 15 per cent there was improvement. Climatic allergens play an important rôle, Storm van Leeuwen affirms, in pulmonary tuberculosis also, and patients with this disease will, in most cases, be favorably influenced by treatment in allergen-free rooms.

Influence of Seasons on Tuberculosis.—Commenting on the fact that the number of reported cases of tuberculosis in the Faroe Islands reaches its peak in the late spring, Heerup suggests that the sun's rays may exert an activating influence on a latent tuberculosis, especially after a long period of comparative darkness.

Beiträge zur klinischen Chirurgie, Berlin

142: 669-892, 1928

Wound Physiology and Wound Treatment. W. von Gaza.—p. 669.
*Etiology and Treatment of Scoliosis. G. Drehmann.—p. 680.
Medical Impressions of a Visit to Hamburg. H. Herfarth.—p. 697.
Classification and Nomenclature of Neoplasms, Particularly of Sarcoma. H. Simon.—p. 702.
Physiology of the Thyroid. A. Winkelbauer.—p. 707.
*Symptoms and Treatment of Malignant Goiter. C. Barthels.—p. 711.
Treatment of Tumors of Lower Jaw. E. Breitkopf.—p. 738.
Idem: Histology and Development. W. Meyer.—p. 742.
Dental Prothesis After Resection of Lower Jaw. K. Greve.—p. 747.
Injection of Hot Water into Angioma. E. Moser.—p. 753.
Hot Water Injection in Goiter. E. Moser.—p. 755.
Enteritis Following Gastric Operations. F. Reischauer.—p. 757.
Inflammatory Tumors of Stomach and of Ileocecal Region. Most.—p. 764.
Multiple Diverticuli of Duodenum and Jejunum. H. Heidecker.—p. 776.
Cancer of the Colon. H. Kauffmann.—p. 784.
*Pylephlebitis and Appendicitis; Treatment by Venous Ligation. E. Melchior.—p. 795.
Necrosis Resulting from Anemic Infarction and Congested Spleen Resulting from Venous Thrombosis. E. Melchior and E. Cordes.—p. 824.
Case of Polycythemia After Removal of Spleen in Splenic Anemia. W. Kühnau.—p. 832.
Surgery of the Pituitary. L. Heidrich.—p. 837.
Neuroma of Median Nerve, of Cervical Plexus and of Peroneal Nerve. F. Erkes.—p. 842.
Follow-Up Study of Sympathectomized Patients. K. Meier.—p. 846.
Osteitis Fibrosa of Bony Pelvis and Femur. J. Becker.—p. 850.
Fracture of Sesamoid Bones and Similar Disease Pictures. Niecke.—p. 857.
Retroperitoneal Lipoma. Katz.—p. 864.
Secondary Nephrectomy in Nephrolithiasis. M. Brenken.—p. 867.
Tumor of Gonads in External Feminine Pseudohermaphroditism. E. Cordes.—p. 872.
Hydrofluoric and Chromic Acid Ulcerations. A. von Tempsky.—p. 878.
Spinal Cord Surgery. H. Küttner.—p. 882.

Etiology and Treatment of Scoliosis.—Drehmann affirms that scoliosis is the result of congenital malformation, of hereditary developmental weakness, or, most frequently, of rickets. He denies the existence of the so-called habit scoliosis developing in the second decade of life in individuals with a previously normal vertebral column. The treatment in the first year and in the beginning of the second year of life, consists of immobilization in a plaster cast, of treatment of the existing rickets, and of general constitutional measures. Plaster case immobilization with correction or with static or respiratory decurvation, is of much value in the second and third years; later it is only of temporary value as a preparatory method to orthopedic mobilization and correction through exercise. Long continued use of supporting apparatus, corsets, etc., is not only useless, but frequently harmful. Operative treatment of the severe forms has not, so far, given striking results.

Symptoms and Treatment of Malignant Goiter.—In 2,272 cases of goiter malignant tumor of the thyroid was found in 112 cases. In 62 per cent there was a preexisting goiter. The age varied from 20 to 90. Primary malignant tumor gave a worse prognosis than a metastatic growth. Of eighty-two histologically examined tumors, forty-six were carcinoma; eight, proliferating struma of Langhans; eight, malignant papilloma; twenty, sarcoma. The longest duration of life after treatment was instituted was six months; two thirds of the patients died within the first four weeks. Surgical removal as well as irradiation exerts very little influence on the prognosis. The earlier statistics gave a very bad prognosis in malignancy of the thyroid. Since 1912, the percentage of survivals beyond the first year has risen in the Breslau clinic from 10 to 46. The improvement is due to earlier operation and to more frequent use of irradiation.

Pylephlebitis and Appendicitis; Treatment by Venous Ligation.—Melchior points out that until the introduction of the Wilms-Braun method of venous ligation, phylephlebitis was considered an almost certainly fatal complication. The surest method of prevention of this complication is operation within the first few hours. Unfortunately, the diagnosis of the cases already complicated by venous thrombosis is difficult. They have an atypical onset with high fever, chills and icterus. The knowledge of these atypical forms of appendicitis is, therefore, very important. In somewhat delayed operation in the presence of frequent chills or other symptoms pointing to portal sepsis, venous ligation should be undertaken as a primary procedure, or simultaneously with the local operation. This is particularly indicated when the mesenteriolum is thick, friable, contains abscesses or is gangrenous, all of which conditions speak for venous thrombosis. It is likewise indicated when chills develop after appendectomy. One should intervene after the second or third chill. The method consists of locating and ligating the ileocolic vein, and if the thrombosis had extended into the superior mesenteric vein, of ligating the latter. Among the objections to the method are the facts that the approach to the field of operation may be difficult, and that it is not always possible to tell whether thrombosis is present. An apparently normal vein may transmit bacteria, or even small emboli. The

author feels, however, that in view of the utterly bad prognosis of pylephlebitis, intervention as proposed by Braun is more than justified.

Deutsche medizinische Wochenschrift, Berlin

54: 643-684 (April 20) 1928. Partial Index

Treatment of Acute Otitis Media. W. Uffenorde.—p. 643. C'td.
Specific Dynamic Action of Foodstuffs. G. Mansfeld and Z. Horn.—p. 646.
Position of Psychotherapy in Medicine. J. H. Schultz.—p. 648. C'cn.
Pharmacology of Hypnotics. E. Keeser.—p. 650.
Dangers of Abrasio Mucosae Uteri. H. Runge.—p. 651.
*Neuralgias and Myalgias in Young Children. A. Reiche.—p. 653.
*Modern Women's Dress. Leven.—p. 659.
*Id. J. Lewy-Hirsch.—p. 659.

Neuralgias and Myalgias in Young Children.—In Reiche's opinion, this subject has not received the attention it deserves. He blames the fashion of short stockings for the frequency of neuralgia in children.

Modern Women's Dress.—Neither Leven nor Lewy-Hirsch agree with Rubner's recent strictures on modern fashions of dress for women. On the basis of racial hygiene, particularly, the present day fashions are to be welcomed, since they afford slight opportunity of concealing physical defects. Lewy-Hirsch holds that women's dress has never been, in principle, as sensible as now. The "bobbed head" is a step forward in the hygiene of the hair. Even "make-up" can be useful in protecting the skin of the face from dust.

Deutsche Zeitschrift für Chirurgie, Leipzig

209: 1-144 (April) 1928

Healing of Experimental Lung Abscesses. C. M. Van Allen.—p. 1.
*Experimental and Clinical Study of Transplantation of Tissues Preserved in Alcohol or in Liquor Formaldehydi. K. Hosomi.—p. 14.
Paraffinoma of Peritoneum: Result of Using Paraffin to Prevent Adhesions: Foreign Body Tuberculosis of Peritoneum. H. Steindl.—p. 31.
*Case of Combined (Double) Colorectal Ileus: Internal Hernias (Recto-vaginal). W. Spitzmüller.—p. 43.
*Temporary Occlusion of Mesenteric Arteries. H. Kuntzen.—p. 56.
Cyst of Common Bile Duct: Choledochoduodenal Anastomosis. J. Erdély.—p. 65.
Myelomeningocele, Meningocele Spinalis: Eleven Cases. J. Tomesku.—p. 74.
Anterior Sacral Meningocele. R. Demel.—p. 90.
Death Following Puncture of Cisterna Cerebellomedullaris. H. Steindl.—p. 97.
Surgical Treatment of Cysticercosis of Cerebrum and of Fourth Ventricle. W. Mintz.—p. 104.
*Dry Gangrene of Glans Penis in Child, with Spontaneous Amputation. A. Dassel.—p. 110.
So-Called Congenital Aural Fistula. E. Seifert.—p. 118.
Left Sided Position of Large Bowel: Congenital Anomaly. B. A. Ostroumow and A. N. Krewer.—p. 124.
Fibroplastic Appendicitis. H. G. Zwerg.—p. 129.
Trauma and Sarcoma of Radius. E. Sattler.—p. 136.

Transplantation of Tissues Preserved in Alcohol or in Liquor Formaldehydi.—Hosomi used pieces of tendon, muscle, artery, nerve and fascia, up to 7.5 cm. in length, preserved in 90 per cent alcohol for from three to 230 days, as transplants in experimental animals and in human beings, with almost invariably favorable results. Even the neuroplasties resulted in complete return of function and electrical reactions. The transplant functions as a prosthesis. Muscle transplants are eventually transformed into fibrous tissue. Arterial transplants first act as conduits for the blood stream; by the time the collateral circulation is fully established, the transplant has been converted into connective tissue and shriveled up completely. Connective tissue transplants in the wall of the stomach are partly digested and absorbed, but eventually they are surrounded by granulation tissue and covered over with gastric mucosa. Transplants in the wall of the urinary bladder and the gallbladder are converted into connective tissue membrane covered with a normal epithelium. The author transplanted kidney fragments into a nerve defect without any untoward reaction and with eventual return of nerve function.

Case of Combined (Double) Colorectal Ileus.—In Spitzmüller's case the intestinal obstruction occurred at two points. The transverse colon was in the left inguinal canal and the rectum was occluded by pressure as the result of a mass of incarcerated omentum which was lodged between the rectum and bladder—a hernia in the Douglas culdesac.

Temporary Occlusion of Mesenteric Arteries.—Kuntzen relates the case of a man who soon after breakfast became ill with severe colic in the upper abdomen, nausea, and symptoms of shock. He vomited once. A diagnosis of pancreatic apoplexy was made and a laparotomy was performed. The findings were negative, except that the lymph vessels of the jejunum and pancreas were prominent, being filled with a whitish fluid. The abdomen was closed. Convalescence was uneventful—but in the night of the eleventh day the patient was found dead in bed. The important observations at necropsy were: general arteriosclerosis, especially of the aorta, and rupture of the intima in the arch. A dissecting aneurysm had formed and blood had descended as far as the renal artery. The celiac artery was considerably compressed by this interstitial hematoma for a distance of 1.5 cm. The author explains the symptoms as follows: The intestinal angina was caused by the vessel spasm (in the celiac artery), pain in the vasomotor nerves, ischemia of muscles and nerves in this vascular zone, tissue acidosis, cramps in the anemic muscles and sclerosis of the vessels of the celiac ganglion.

Dry Gangrene of Glans Penis in Child, with Spontaneous Amputation.—In Dassel's case, an encircling scar in the coronary sulcus of the glans penis, the result of a phimosis operation done four years previously, caused sufficient constriction to lead, in turn, to a dry gangrene of the glans and its eventual spontaneous amputation. All other structures were normal and the patient presented no untoward symptoms. The urethra was intact and urination unimpeded.

Klinische Wochenschrift, Berlin

7: 777-824 (April 22) 1928. Partial Index

*Quantity of Blood in Circulation in Collapse and Analogous Conditions. H. Eppinger and A. Schürmeyer.—p. 777.
*Bacilli in Erythrocytes in Pernicious Anemia. V. Schilling.—p. 785.
*Müller's Agglutination Reaction for Syphilis. H. Mayser.—p. 792.
*Sodium Bicarbonate Treatment of Tetanus. P. Heim.—p. 794.
*Action of Light Baths on Hypertension. H. Marx.—p. 795.
*Action of Buffer Solutions on Gastric Secretion. J. Vándorfy and E. Baráth.—p. 800.
Cholesterol Content of Serum After Roentgen Irradiation. F. Burgheim.—p. 802.
Reply. R. Hubert.—p. 802.

Quantity of Blood in Circulation in Collapse and Analogous Conditions.—Eppinger and Schürmeyer used the carbon oxide method of determining the amount of blood in the circulation. In fever the amount appears to be increased. In collapse it falls to very low values. After general anesthesia there is a considerable decrease. In diabetic coma the quantity falls far below normal. In one case of severe burn, it fell to less than half the normal value. In many cases of hypertonia (the cases studied represented chiefly pure forms) the amount of circulating blood seems to be greater than normal. The relation between the quantity of circulating blood and that of the blood held in the storage depots can be altered by physical means and by drugs. Heat, muscle work, inhalation of carbon dioxide, the drugs epinephrine, strychnine, barium chloride, pituitary solution, etc., act to release stored blood to the circulation; peptone, in large doses, has the opposite effect. The fact that injection of peptone has the same effect on splenectomized animals as on normal animals shows that the spleen is not the only depot for blood in the body.

"Erythrocontes," Bacilli in Erythrocytes in Pernicious Anemia.—Schilling describes a bacillus which he found in human erythrocytes in thirty-nine cases of true pernicious anemia, in three cases of lymphatic leukemia, one case of acute leukemia, one of suspected syphilis, one of aleukemic myelosis and one case in which a beginning pernicious anemia was suspected. In three cases of pernicious anemia, it was absent. In 174 cases of various internal diseases, it was carefully sought for but not found. The organism measures from 2 to 4 millimicrons. It is characteristic and easily recognized.

Experiences with Müller's Agglutination Reaction for Syphilis.—Tested with 635 serums, Mayser found that Müller's agglutination reaction gave poorer results than the Wassermann reaction, the Sachs-Georgi reaction or the Meinicke turbidity reaction in the serodiagnosis of syphilis. Both the number of nonspecific (positive) reactions and the number of insufficiently sensitive reactions were greater than with the other methods. The technic is also more difficult and more time consuming and presents more sources of error.

Sodium Bicarbonate Treatment of Tetanus.—Heim saw good results from intravenous and peroral administration of large quantities of sodium bicarbonate. Five of six patients thus treated recovered. It does not give prospect of cure in the severest types, but, in cases in which there is hope of recovery it appears to shorten the course of the disease and lessens suffering. It acts, in his opinion, by neutralizing the acid milieu in the muscle due to the lactic acid formed by the muscle contraction.

Action of Light Baths on Hypertension.—Marx treated with light baths twenty-one ambulant patients with hypertonia (essential, combined with multiple sclerosis, with changes in the vessels, toxic or otherwise, with syphilis or with secondary contracted kidney). The source of the light was twelve carbon filament bulbs. Each irradiation lasted for one hour. Under the influence of the light, the blood pressure fell in all cases. In seven patients (three with arteriosclerosis and four with essential hypertonia), a lasting decrease was obtained. All the patients bore the treatment well, and, with two exceptions, showed an improvement in subjective symptoms.

Action of Buffer Solutions on Gastric Secretion.—A mixture of normal sodium phosphate and acid sodium phosphate was found useful by Vándorfy and Baráth in limiting the acid secretion of the stomach. It does not irritate the gastric mucous membrane.

Medizinische Klinik, Berlin

24: 645-684 (April 27) 1928. Partial Index

*Differential Diagnosis of Muscular Rheumatism. H. Curschmann.—p. 645.
Epinephrine Reaction, Innervation of Ascending Aorta and Minimal Pressure. J. Pal.—p. 647.
New Method of Clinical Blood Examination. V. Schilling.—p. 648.
One Hundred and Thirty-Four Cases of Anterior Poliomyelitis. W. Hoffmann and R. Unger.—p. 651.
Associated Movements and Tics. B. Silbiger.—p. 654.
Industrial Diseases from Benzene. K. Landé and L. Kalinowsky.—p. 655.
Nature of Agranulocytosis. P. Kaznelson.—p. 658.
Diagnosis of Malignant Pulmonary Tumors: III. Primary Bronchial Carcinoma. A. Sonnenfeld.—p. 659. C'cn.
*Basophil Cells of Pituitary Body and Constitution. E. J. Kraus.—p. 662.

Differential Diagnosis of Muscular Rheumatism.—Curschmann calls attention to the importance, from the standpoint of treatment, of early differentiation of primary muscular rheumatism from the diseases in which pain in the muscles is a frequent (often initial) symptom. It may be differentiated from polymyositis by absence of phenomena of infection and by negative results of bacteriologic examinations. Differentiation from subacute and chronic recurrent trichinosis may be difficult, since in these forms *Trichinella* may be absent from the blood and muscles. Eosinophilia is present in both diseases, but in muscular rheumatism the eosinophils seldom rise above 15 per cent while in trichinosis they may reach 70 per cent. Typical neuralgias and myalgias are frequently found together. The nerve pressure points and disturbance of sensation in the skin, typical of all true neuralgias, are absent in myalgia. Extramedullary tumor, pachymeningitis, myelitis, circumscribed spinal meningitis, endospinal focal diseases, even polysclerosis may masquerade as muscular rheumatism for a long time. Myalgia of psychic origin must be differentiated by neurologic examination. Rarely myalgic pains occur in exophthalmic goiter and myxedema. All the cases of senile and late nonpuerperal osteomalacia observed by the author began with neuralgia or myalgia. Late rickets is usually first diagnosed as sciatica, lumbago or flatfoot. Every patient with stubborn "lumbago" or "torticollis" should be examined with the roentgen ray for spondylitis or spondylosis. Tumors of the spinal column and vascular lesions may also simulate myalgia.

Basophil Cells of Pituitary Body and Constitution.—Kraus found that the quantity of basophil cells in the pituitary depended chiefly on constitution and blood pressure. It was greater in hypersthenic than in mesosthenic or asthenic individuals. Other factors no doubt play a rôle; thus in half the cases of carcinoma examined, the basophil cells were greatly decreased. Persons with abnormally large and cholesterol-rich suprarenals and persons with adiposity presented an increased quantity of basophil cells in the pituitary, so that it appears probable that cholesterol metabolism also stands in some relation to these cells.

Monatsschrift für Kinderheilkunde, Leipzig

38: 289-480 (April) 1928

*Ulceronecrotic Glossitis in Scarlet Fever. I. Berger.—p. 289.
So-Called Pachymeningitis Haemorrhagica Interna. R. Glauber.—p. 293.
Neurologic Examinations of Premature Children. W. Catel.—p. 303.
*Latent Hemoglobinuria from Cold in Children with Congenital Syphilis. L. Steinbock.—p. 336.
Scarlet Fever: One Hundred and Fifty Cases. G. Demohn.—p. 344.

Ulceronecrotic Glossitis in Scarlet Fever.—In a child, aged 11, who had typical scarlet fever with ulceronecrotic involvement of the tonsils, the ulcers extended to the tongue, beginning on the margins. Ulcers formed also on the lips and in the corners of the mouth, but the mucous membrane of the cheeks was free. Neither diphtheria bacilli, spirochetes nor fusiform bacteria were found in the grayish yellow coating on the tongue. The general condition was bad and the entire process remained much the same, with the temperature around 39 C., till the twenty-ninth day, when improvement began. On the forty-second day the child was discharged entirely cured. The ulcers left no traces. Three other children who were attacked with scarlet fever at the same time in the same house (a children's home) presented no special involvement of the organs of the mouth or pharynx.

Latent Hemoglobinuria from Cold in Children with Congenital Syphilis.—Thirty-three patients with congenital syphilis were tested for the specific cold hemolysin by Donath and Landsteiner's method. In three, aged, respectively, 12, 15 and 18 years, the reaction was positive. The cold hemoglobinuria was clinically latent.

Münchener medizinische Wochenschrift, Munich

75: 681-720 (April 20) 1928. Partial Index

*Demonstration of Electric Fields in the Vicinity of the Body. F. Sauerbruch and W. O. Schumann.—p. 681.
Modern Researches on Etiology of Yellow Fever. W. Schüffner.—p. 682.
*Increase of Pulmonary Embolism. S. Oberndorfer.—p. 683.
Thyroxin Constituents in Thyroid Gland. I. Abelin.—p. 685.
Simple Method of Demonstrating Spirochaeta Pallida. A. Grumbach.—p. 688.
Technic of Meinicke's Turbidity Reaction. K. L. Pesch and F. Kortenhaus.—p. 688.
Future of Bacteriology. E. Almquist.—p. 690.
Treatment of Frost Bite. W. von Nobrden.—p. 691.
*Muscle Strain from Working with Bent Back as cause of Backache. A. Müller.—p. 695.
*Technic of Abdominal Section. G. K. Tscherepachin.—p. 695.
Prevention and Treatment of Allergic Diseases by Filtered Air. E. Fränkel and E. Levy.—p. 696.
Serodiagnosis of Echinococcus Disease in Man. G. Blumenthal.—p. 697.
Allergy and Eosinophilia. A. Uffenheimer.—p. 697. C'cn.

Demonstration of Electric Fields in the Vicinity of the Body.—In a preliminary communication, Sauerbruch and Schumann report that they have succeeded in registering in the vicinity of the body and without direct conduction electrophysiologic processes in the organism. The phenomena probably represent a summation of electric excitations in the skin and the effects of action currents. Four curves are reproduced, representing various kinds of muscle work as registered at a certain distance from the body. The results obtained by these authors differ in principle, they state, from those reported by Heydweiller in 1902.

Increase in Pulmonary Embolism.—Oberndorfer seeks the reason for the alarming increase in deaths from pulmonary embolism in recent years. In the first two months of 1928, he saw thirty cases of pulmonary embolism in 150 necropsies. Most of the patients were in the sixth, seventh and eighth decades. The internal disease department and the surgical department were represented, respectively, as 7.5 to 5. Cardiovascular diseases yielded two thirds of the fatal cases of pulmonary embolism in the department of internal diseases. Oberndorfer suggests that the increase of deaths from this cause may be due to recent improvements in the therapy of the heart, which allows the heart to outlast the venous endothelium.

Muscle Strain from Working with Bent Back as Cause of Backache.—Chronic pain in the sacral region is, Müller asserts, at least as frequent in men as in women. It is caused almost always by working habitually with the back bent and results from strain of the gluteal and back musculature.

Technic of Abdominal Section.—To prevent the amniotic fluid from getting into the abdominal cavity in cesarean section, Tscherepachin employs a piece of rubber sheeting such as is used to repair automobile tubes. He brings the uterus out through a round opening in the center of the sheet.

Wiener klinische Wochenschrift, Vienna

41: 581-616 (April 26) 1928. Partial Index

Biologiochemical Tendencies in Dermatologic Research. E. Urbach.—p. 581.
Granules in Central Nervous System in Experimental Poliomyelitis in Monkeys. R. Kraus and F. Gerlach.—p. 584.
*Method of Attenuated Treatment with Malaria. L. Horn and O. Kauders.—p. 585.
Relations Between Heart and Kidneys. V. Kollert.—p. 587.
*Case of Diabetes Insipidus Caused by Hypernephroma Metastasis in Midbrain. A. W. Elmer, J. Kedzierski and M. Scheps.—p. 591.
*Postoperative Thromboses and Emboli. W. Rippel.—p. 594.
Heredity in Pathology. J. Wagner-Jauregg.—p. 595. C'cn.

Method of Attenuated Treatment with Malaria.—Horn and Kauders describe a method which they use in treating tabetic atrophy of the optic nerve, where the full effect of the malaria is to be avoided. The temperature is kept below 40 C. On the day following the inoculation, 0.05 Gm. of quinine is given. This dose is repeated every second day during the incubation period. Thereafter, quinine is given in the same doses after the attack, when the temperature has begun to fall. If an attack does not reach the desired height, the next dose is postponed till the beginning of the following attack. In malarial treatment of tabetic opticus atrophy the danger from too stormy a reaction seems to lie mainly in the early attacks of fever. No bad effects were seen from the treatment. The therapeutic results will be reported when the observation period has been sufficiently long.

Case of Diabetes Insipidus Caused by Hypernephroma Metastasis in Midbrain.—A case of diabetes insipidus, of severe course and entirely refractory to treatment, including injections of proteins and of pituitary solution, is reported by Elmer et al. At necropsy a hypernephroma metastasis was discovered in the midbrain. The secondary changes in the pituitary body were slight, the secretion could not have been much affected; but the centers for water and salt regulation in the midbrain were destroyed. The hyperglycemia and glycosuria that were also present in this case are explained by the destruction of the centers for carbohydrate metabolism, situated near the aforesaid centers.

Postoperative Thrombosis and Embolism.—Rippel compares the incidence of postoperative thrombosis and embolism in the second surgical clinic of the university of Vienna in 1913 (a year chosen at random) and in 1927. The latter year shows an increase in cases of thrombosis of about 60 per cent. There was no increase in the number of pulmonary emboli. The basic diseases (in 1927) were: malignant tumors, 25 per cent; inflammatory surgical diseases, 25 per cent; noninflammatory surgical diseases, 20 per cent; hernias, 15 per cent; fractures, dislocations, etc., 15 per cent. In only two of the nine cases of fatal pulmonary embolism was there an externally visible thrombophlebitic process. The chief danger lies in occult cases of thrombosis, in which the patients are allowed to get up. Immediately on the appearance of thrombosis in the deep veins of the thigh or leg, from 10 to 20 cc. of a 10 per cent solution of sodium citrate is injected intravenously. In about a quarter of the patients, there were scarcely any symptoms; another quarter had extremely severe, stabbing pains. Most of the remaining patients with thrombosis of the femoral veins stated that they had had rheumatic symptoms, not very severe, in the beginning.

Zentralblatt für Chirurgie, Leipzig

55: 1025-1088 (April 28) 1928

*Question of Sensibility of Anterior Roots. W. Rieder.—p. 1026.
Treatment of Tetanus with Subdural Intracranial Serum Injections. R. Goedecke.—p. 1027.
Occurrence of Fabella. J. Grassmück.—p. 1031.
Simple Anesthetic Mask. E. Kahnt.—p. 1033.
*Traumatic Subcutaneous Intestinal Prolapse. F. Breuer.—p. 1034.
Tear of Quadriceps Tendon. K. Hugel.—p. 1039.

Sensibility of the Anterior Roots.—To determine the question of conductivity of pain through the anterior roots, Rieder resected the tenth to the twelfth dorsal posterior roots in dogs. In forty-five dogs so treated, no pain could be elicited. In twenty-three dogs, pain was elicited and in these it was found that not all of the posterior roots had been destroyed. The author concludes that pain is not conducted through the anterior roots.

Hernia of Intestine into the Abdominal Wall.—These hernias are the result of a rupture of all the abdominal layers, except the skin. The intestines prolapse through the rent under the skin. As a result, there is seen a good sized swelling; symptoms of abdominal shock are present, and later signs of ileus develop. Only seventeen cases of this type have been reported. In Breuer's case, a very muscular man was struck with great force in the upper portion of the abdomen by the shaft of a wagon. At operation a loop of bowel presented as soon as the skin was incised. It was easily replaced. A superficial portion of the external oblique muscle was torn in the direction of its fibers, whereas its deeper portion, together with the internal oblique, was torn transversely.

Mikrobiologicheskiy Jurnal, Leningrad

6: 1-176, 1928. Partial Index

*Pfeiffer's Bacillus in Influenza Epidemic in Leningrad in 1927. L. C. Basilevskaya et al.—p. 16.
Treatment of Erysipelas with Besredka's Streptococcus Filtrates. C. V. Vasilieva et al.—p. 36.
*Immunization of Children with Scarlet Fever Anatoxin. M. A. Zelikina and D. A. Kuritzina.—p. 63.
*Experimental Scarlet Fever in Rabbits. P. C. Rosen et al.—p. 95.

Pfeiffer's Bacillus in Influenza Epidemic in Leningrad.—Pfeiffer's bacillus was recovered from the throat in seventy out of 100 cases in this epidemic. Carriers constituted 29 per cent of the well persons, 39 per cent of patients with measles, and 22 per cent of scarlet fever patients. The serum of influenza patients agglutinated the bacilli in much greater dilution than did the serum of the well persons or of scarlet fever patients.

Immunization of Children with Scarlet Fever Anatoxin.—Zelikina and Kuritzina were able to lower materially the toxicity of scarlet fever toxin prepared according to the method of Dick, without losing its antigenic property, by the addition of 1 per cent formaldehyde solution and by keeping it in a thermostat at 40 to 42 C. for five weeks. Administration of large doses of anatoxin on two occasions, 4,500 skin doses the first time, and 30,000 the second time, resulted in conversion of a positive Dick reaction to a negative one in a high percentage of cases without producing a marked reaction on the part of the organism. In 100 children immunized by this method, eighty exhibited a change from a positive to a negative Dick reaction; in thirteen the positive reaction became weaker, and in seven it was not influenced.

Experimental Scarlet Fever in Rabbits.—Rosen et al. experimented with various modes of transmission of scarlet fever infection to rabbits. They swabbed the throats or rabbits with material obtained from the throats of scarlet fever patients. In some rabbits this material was injected intravenously. They also injected intravenously from 2 to 3 cc. of emulsion of liver, spleen, bone marrow, or lymph glands obtained at necropsies on scarlet fever patients. Of the thirty-seven inoculated rabbits, thirty-one developed scarlet fever. The disease in the rabbit was characterized by an evolution very much like that in man and by complications occurring in scarlet fever, nephritis, otitis, arthritis. A streptococcus was recovered from the blood and inner organs with the same frequency as in man. The postmortem changes in the infected rabbits, considered as a whole, bore a striking resemblance to those found in human scarlet fever.

Bibliotek for Læger, Copenhagen

120: 93-152 (March) 1928

*Intravascular Occurrence of Megakaryocytes in Man, Especially in Cases of Myeloid Leukemia. S. Petri.—p. 93.
*Tuberculosis of the Esophagus. B. Vimtrup.—p. 137.

Intravascular Occurrence of Megakaryocytes in Man, Especially in Cases of Myeloid Leukemia.—On the basis of studies of smears and sections, Petri discusses from the morphologic, topographic, and numerical standpoints the intravascularly located megakaryocytes in three cases of typical grave myeloid

leukemia. Supplementary investigations were also made in cases of myeloid leukemia, lymphatic leukemia, and pernicious anemia. In myeloid leukemia, megakaryocytes were constantly demonstrable in the greater circulation, in one instance also in the renal vessels. In only one of the two cases in which the lungs were examined, were megakaryocytes found. The granular form predominated everywhere in the blood vessels. Many granular megakaryocytes included erythrocytes in their protoplasm (phagocytosis), and in some cases indirect nuclear division was seen. He says that naked megakaryocytes in man are in structure, number, and reaction an independent, nongranular, well characterized variety. The number of circulating megakaryocytes did not seem to be in proportion to the number of giant cells in the bone marrow, but there was a certain agreement between the relative number of these cells in the bone marrow and in the blood stream. The passage of the cells through capillary fields depends partly on the cell form, partly on the blood pressure in the field. In the three cases of myeloid leukemia, megakaryocytes were not demonstrable in smears of peripheral blood or in sections of blood clots or doubly ligated vessels.

Tuberculosis of the Esophagus.—Vimtrup reports five cases and cites others from the literature. The material shows that esophageal tuberculosis occurs only in patients already affected with a grave open tuberculosis. In the cases in which caseous tuberculous glands perforate the esophagus, the tuberculosis as a rule becomes local and heals. The infrequency of tuberculosis of the esophagus is explained partly by anatomic structure, partly by physiologic relations.

Hospitalstidende, Copenhagen

71: 205-228 (March 1) 1928

Investigations on p_H in Different Portions of Intestine in Animals on Normal Diet and with Lack of B Vitamin. N. Schoubye.—p. 205.
*Experiences with Periarterial Sympathectomy. J. Foged.—p. 216.

Experiences in Periarterial Sympathectomy.—Foged reports on his eight cases since 1924 (one a "total sympathectomy") in patients, aged from 31 to 80. In three of the six cases of gangrene of the foot, marked temporary improvement followed, and in the two cases with causalgia the results were satisfactory. He considers the intervention indicated in gangrene of the foot resistant to conservative treatment and in causalgias with an established organic basis for the symptoms.

71: 253-278 (March 15) 1928

*Existence of Blood Types Coordinate with and Subordinate to the Four Landsteiner Types. O. Thomsen.—p. 253.

Existence of Blood Types Coordinate with and Subordinate to the Four Landsteiner Types.—Thomsen finds that the departures noted from Landsteiner's four type classification depend on the occurrence of defective types and on the effect of the so-called cold agglutinins. His research on blood from about 3,500 persons disclosed six cases designated as defective; examinations in relatives in every case pointed to lack of agglutinins, not of receptors. Cold agglutinin is present in the serum of every person (except the new-born and certain defectives), although differing quantitatively. Its action at from about 18 to 20 C. depends not only on the serum but also on the blood platelets used. The four Landsteiner types cannot, he says, be divided into definite subordinate types according to the effect of the cold agglutinin of a certain serum on the blood platelets, as every division is to a certain extent arbitrary and the effect of cold agglutinin is at least partly paratypical and without constancy.

71: 279-320 (March 22) 1928

*Cholecystography. V. Finsen and T. Geill.—p. 279.

Cholecystography.—Finsen and Geill's study of 100 cholecystograms (in ninety-one patients), in forty-two of which the intravenous method was used, in fifty-eight, the oral, indicates the superiority of the intravenous method. The motility of the gallbladder, especially its emptying, was tested in sixty-nine patients, all with a strong shadow. In the course of one-half hour after intake of a meal rich in fats (motility test meal), there was decrease of the gallbladder shadow in nineteen out of twenty cases, as a sign of emptying of the gallbladder. Epinephrine, atropine, histamine, solution of pituitary and ergot were in the main without effect. A study of the results in 204 cholecystograms (in 180 patients) testifies to the clinical value, on use of the intravenous method, not only of the missing shadow, but also of the faint shadow.

Ugeskrift for Læger, Copenhagen

90: 305-332 (April 5) 1928

*Palliative Therapy in Hopeless Conditions. H. Iacobaeus.—p. 305.
*Basal Metabolism in Patients with Leukemia and Lymphogranulomatosis. S. A. Holbøll.—p. 311.
The p_H in Health, in Gastric Achylia, Simple Colitis, and Gastrogenic Diarrhea. N. C. Lunding.—p. 319.
Two Cases of Hay-Fever. T. Schwartz.—p. 323.

Palliative Therapy in Hopeless Conditions.—On the basis of a large hospital material, Iacobaeus discusses palliative treatment and its value and describes fully his procedure in a case of cancer of the pleura and spinal column and excessive development of metastases with exceptionally violent and constant pain. In the last six and a half months of life, 0.432 Gm. of scopolamine and 57.2 Gm. of morphine were administered, 2.38 Gm. of the morphine were given intravenously in the final weeks, with good results. He would in a future similar case give morphine intravenously instead of extremely high doses subcutaneously.

Investigations on Basal Metabolism in Patients with Leukemia and Lymphogranulomatosis.—Holbøll found the basal metabolic rate elevated in five cases of leukemic lymphadenosis, five of leukemic or aleukemic myelosis, and three of lymphogranulomatosis. He ascribes to the rise in the metabolic rate some of the symptoms in these cases, especially the emaciation. Where the basal metabolism was followed during treatment, lowered metabolism was seen to be succeeded by improvement of the general condition, while continued high basal metabolism gave a poor prognosis.

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*Pharmacodynamic Properties of Chlorophyll. E. Rentz.—p. 371. In English.
Effect of Inoculation Malaria on Composition of Cerebrospinal Fluid in Paralytics. B. Jacobowsky.—p. 393.
Gonioscopy and Glaucoma Theory. J. W. Nordenson.—p. 407.
Treatment of Criminals with So-Called Diminished Responsibility. A. Petrén.—p. 413.
*Color of Macula Centralis Retinae. J. W. Nordenson and T. Nordmark. —p. 499.
Comparative Determination of Time of Release of Nonvisual and Visual Motor Impressions in Eye Movements Induced by Weak Galvanic Current. G. F. Göthlin and N. Raab.—p. 507.
Determination of Blood Group with Anthropologic References. E. D. Schött.—p. 515.
Increase in Narcotic Effect of Bromural by Aid of Amidopyrine. S. Nyborg.—p. 527.
*Fluoroscopic Method of Studying Heart Action in Animals. C. G. Sundberg.—p. 563. In English.

Some Investigations on Pharmacodynamic Properties of Chlorophyll.—Rentz finds that chlorophyll exerts a stimulating action on the smooth muscles, sensitizes the sympathetic nerves, causes leukocytosis, and is one of the most powerful agents known for the production of thrombocytosis.

Remarks on Color of Macula Centralis Retinae.—The results of Nordenson and Nordmark's ophthalmoscopic examinations of the eye after death, testify against the presence of a yellow color in the macula; Holm's test also failed to yield evidence for this color.

Fluoroscopic Method of Studying Heart Action in Animals.—Sundberg in his preliminary report says that the movement of the base of the heart toward the apex, the most important component in the systolic contraction of the ventricles, is invisible on the usual fluoroscopic examination. With the injection of iodized oil into the pericardium (Laurell), infiltration of the surrounding tissues with the oil being carefully avoided, the roentgenogram shows the excursions of the auriculoventricular groove to be wide, while the lateral contours and the apex move only slightly if at all. To follow the movements accurately, a series of instantaneous pictures were made and recorded according to Goett-Rosenthal's method. The chief points of the curves are discussed.